Transforming National Security

Office of Force Transformation

"A Future Worth Creating"

Vision: Broad and Sustained Competitive Advantage

- ***Strategy***
- ***Capabilities***
- ***Metrics***

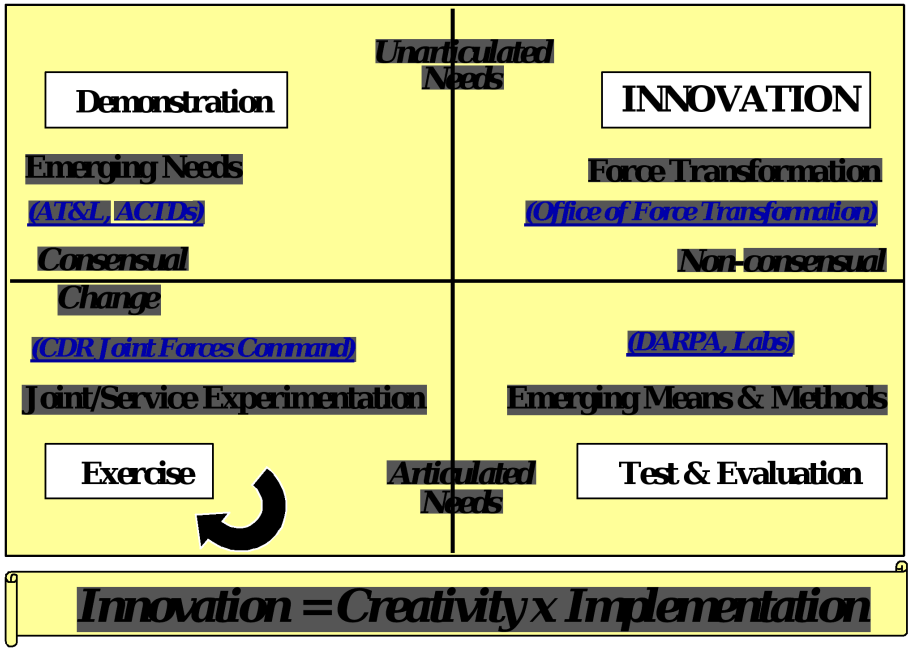
Terry J. Pudas
Deputy Director, Force Transformation
1 November 2004

Transforming Defense

Office of Force Transformation

- The Role of Defense in National Security
- The Management of Defense
- The Force

As National Strategy
As Corporate Strategy
As Risk Management Strategy



Vision: Broad and Sustained Competitive Advantage

Transforming Defense

... *Working definition*

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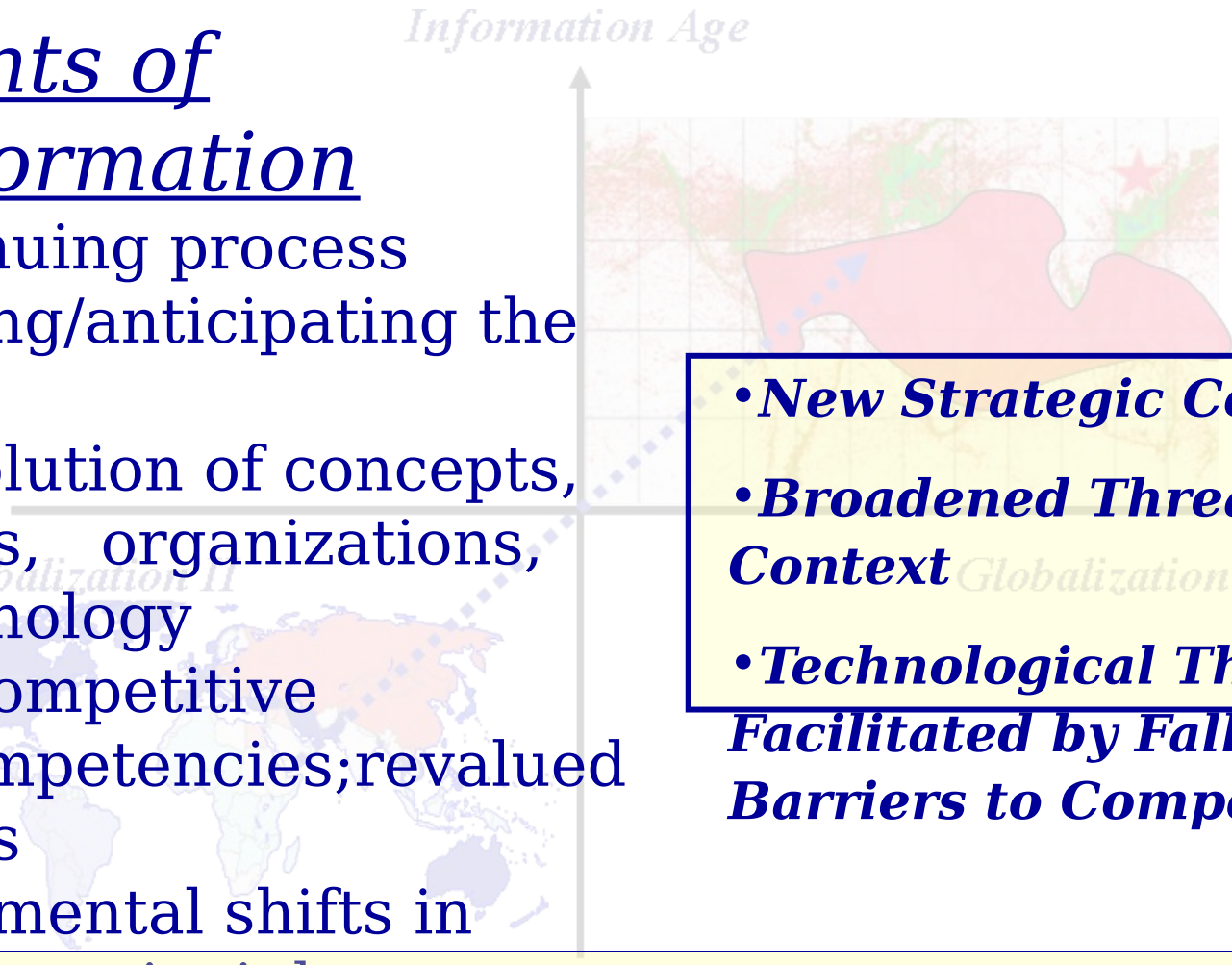
Elements of Transformation

- ☑ Continuing process
- ☑ Creating/anticipating the future
- ☑ Co-evolution of concepts, processes, organizations, and technology
- ☑ New competitive areas/competencies;revalued attributes
- ☑ Fundamental shifts in underlying principles
- ☑ New sources of power



- ***New Strategic Context***
- ***Broadened Threat Context***
- ***Technological Threats***

Facilitated by Falling Barriers to Competition

Vision: *Broad and sustained competitive advantage*

Global Trends

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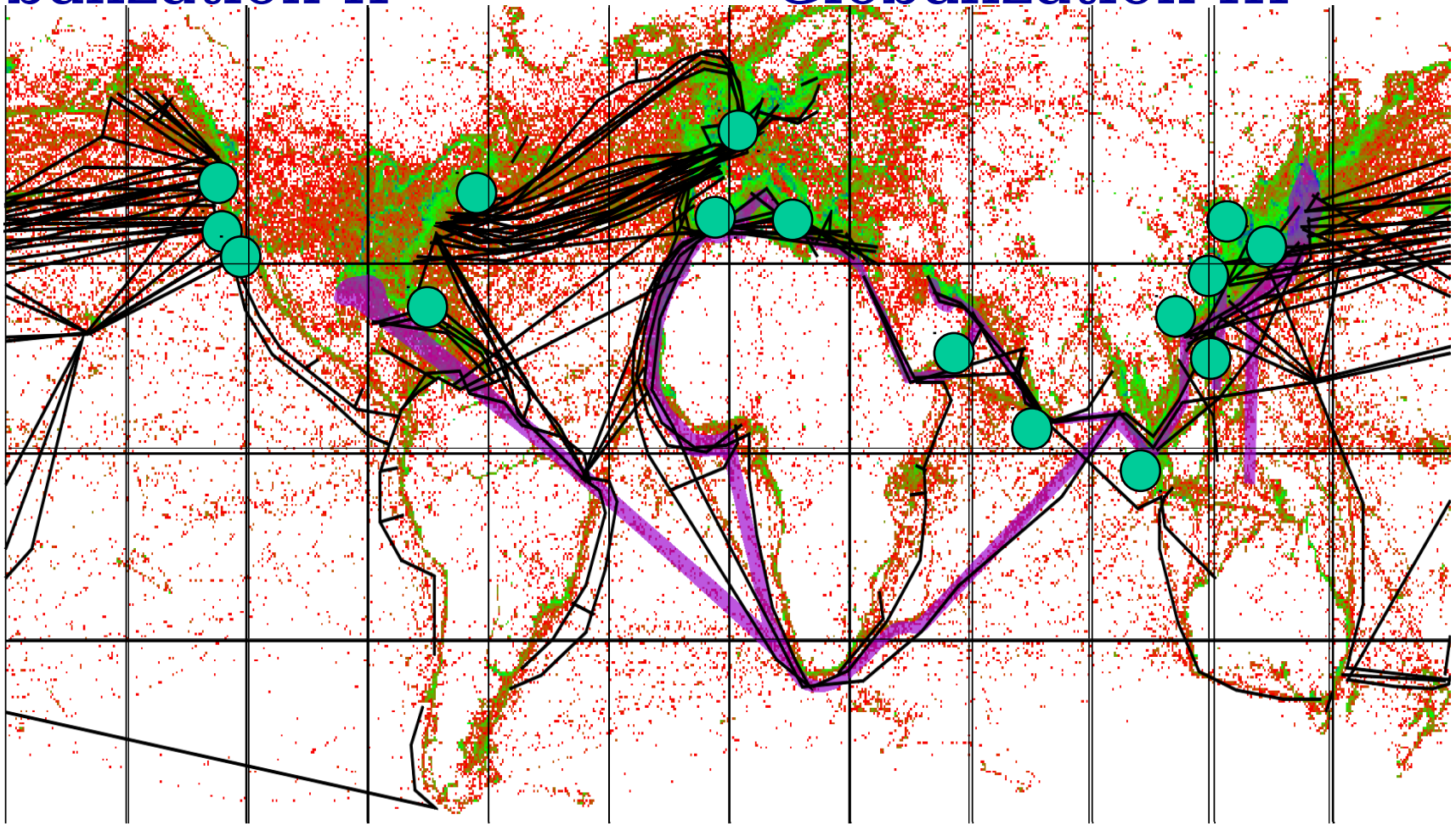
Globalization II → Globalization III



Industrial Age → Information Age

Trends in Security Competition

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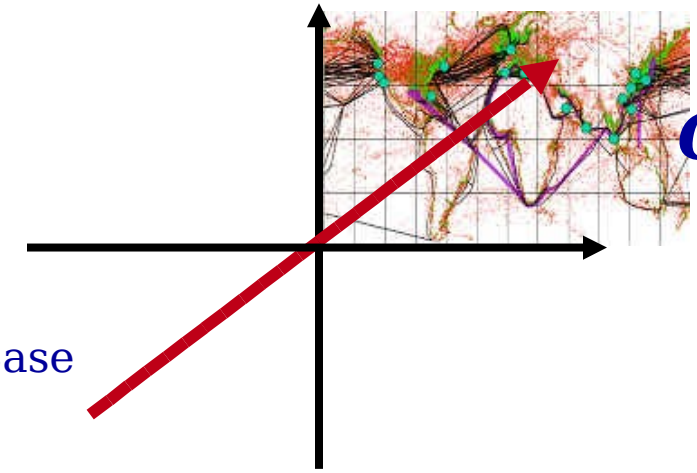
Information Age

- Short Cycle Time
- New Competencies
- Adaptive Planning
- Interdependence

Globalization II

(1947 – 199X)

- Developed Rules
- Mature Markets
- Narrowing Customer Base
- Security = Defense



Globalization III

(199X – 20XX)

- Emerging Rules
- Market Opportunities
- New Customer Base Eme
- Security = All Else + Def

Industrial Age

- Long Cycle Time
- Well Developed Tools / Processes
- Deliberate Planning
- Tortured Interoperability

Globalization III

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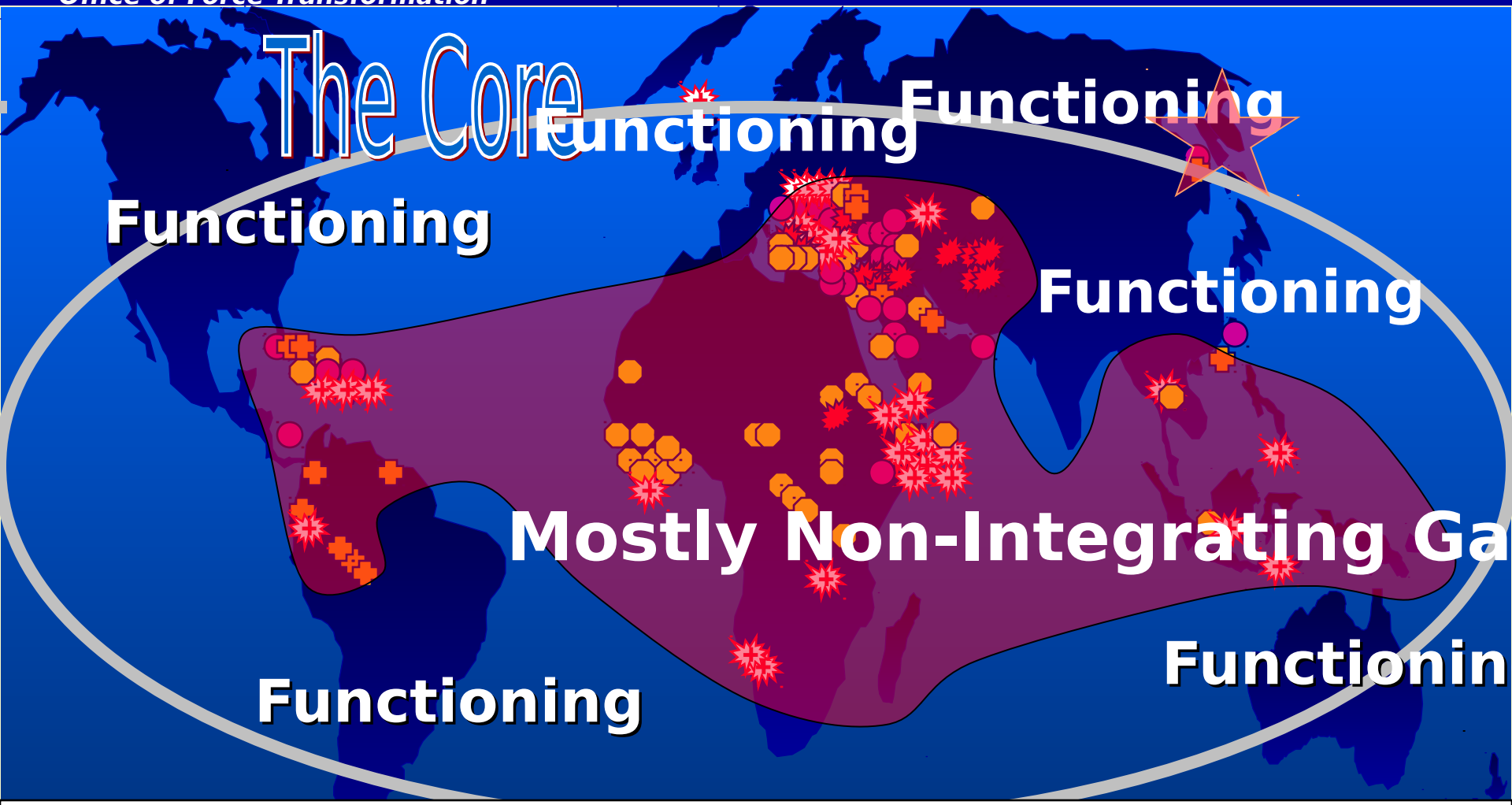

U.S. Military Responses to Situations, 1990-2002

Evac's · Peace/ Relief · Contingency Positionin · Show of Force · Combat

Transforming National Security

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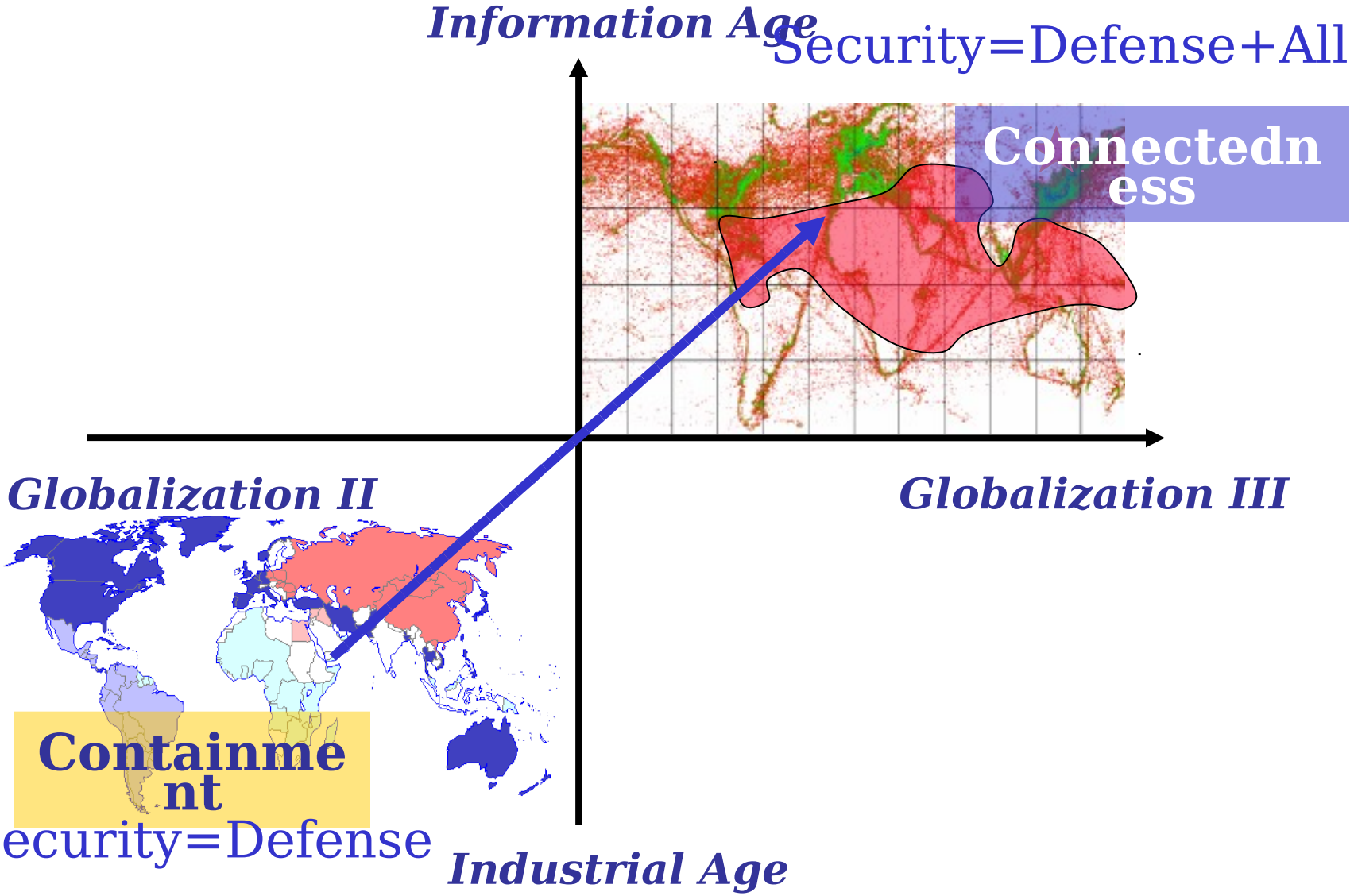

Transformation

...Meeting the Challenges of the New Competitive Landscape

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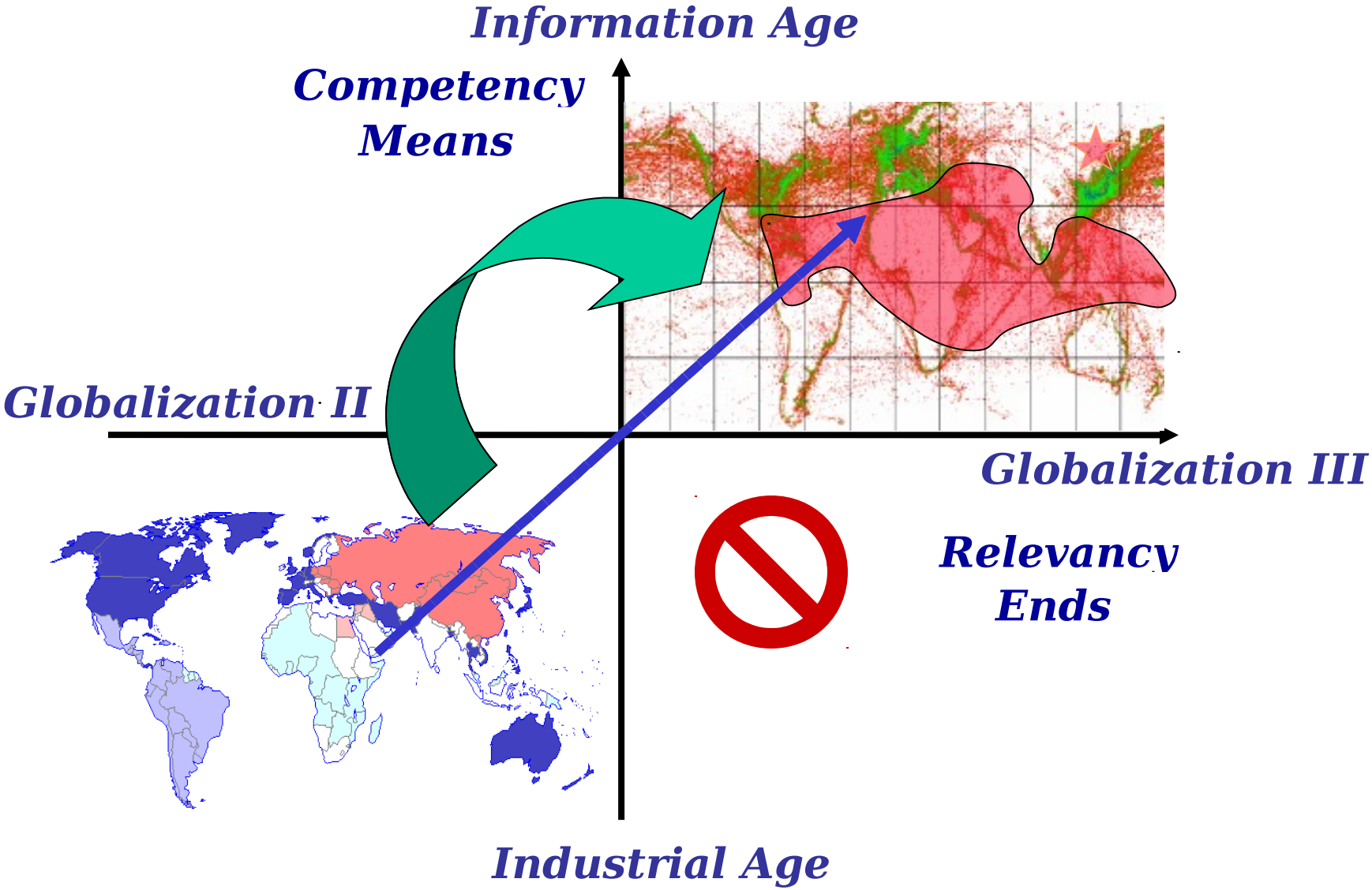

Global Trends…Threats

…Strategic Response

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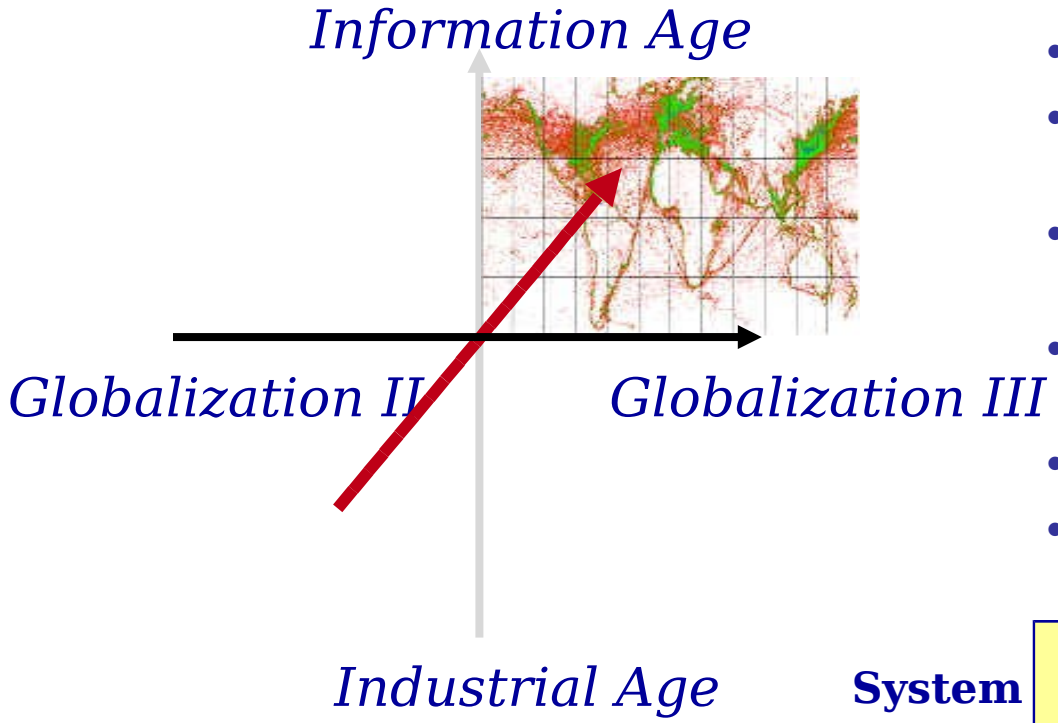

Strategic Capabilities:

- *More preventative - less punitive*
- *Achieve unambiguous warning earlier*
- *More Special Operations like characteristics*
- *An intel / surveillance-based force*
- *Interoperability/interdependence*
- *Coping with Systems Perturbations*

System	**----- [Great Power War?] -----**			
State	**Political Ideology**	**Hated Dictator**	**Hated Dictator w/Nukes**	**Nuclear Nationalists**
Individual	**Narco-terrorists**	**Regional Terrorists**	**International Terrorists**	**SEI***

*** Super-Empowered Individual**

Security Environment

... Four Challenges

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Security Environment

... Four Challenges

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Irregular

Those seeking to erode American influence and power by employing unconventional or irregular methods

(e.g., terrorism, insurgency, civil war and emerging concepts like "unrestricted warfare")

Likelihood: ***very high; state of the weak***
Vulnerability: ***moderate, if not effectively checked***

Catastrophic

Those seeking to paralyze American leadership & power by employing WMD or WMD-like effects in unwarned attacks on symbolic, critical or other high-value targets **(e.g., 9/11, terrorist use of WMD, rogue missile attack)**

Likelihood: ***moderate and increasing***
Vulnerability: ***unacceptable, single event could alter American way of life***

Traditional

Those seeking to challenge American power by instigating traditional military operations with legacy and advanced military capabilities

(e.g., conventional air, sea and land forces and nuclear forces of established nuclear powers)

Likelihood: ***decreasing (absent preemption) due to historic capability-overmatch and expanding qualitative lead***
Vulnerability: ***low, only if transformation is***

Disruptive

Those seeking to usurp American power and influence by acquiring breakthrough capabilities

(e.g., sensors, information, biotechnology, miniaturization on the molecular level, cyber-operations, space, directed-energy and other emerging fields)

Likelihood: ***Low, but time works against U.S.***
Vulnerability: ***unknown; strategic surprise puts American security at risk***

Higher

Lower

VULNERABILITY

Lower

Higher

LIKELIHOOD

No hard boundaries distinguishing one category from another

Competency vs. Relevancy

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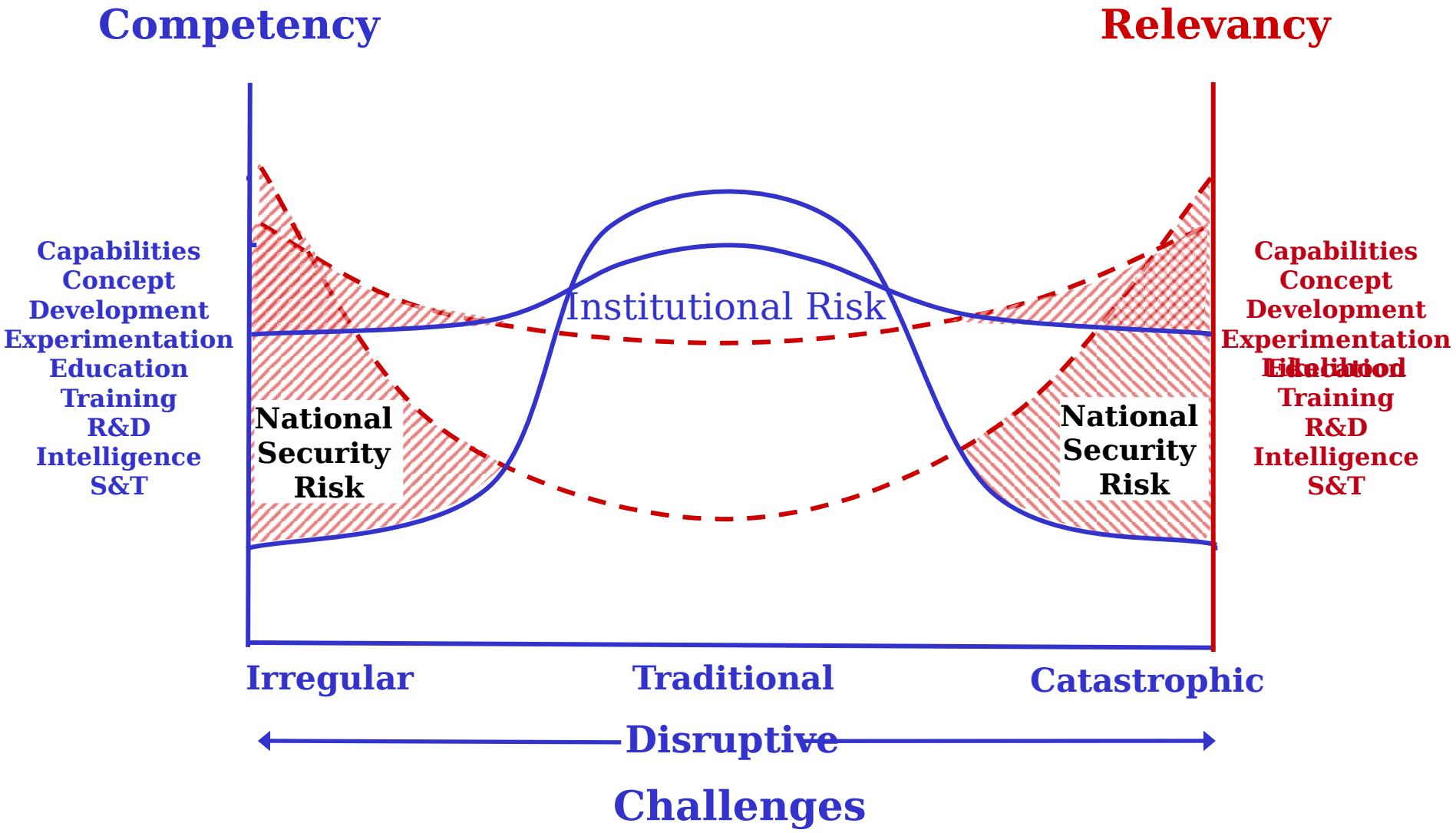
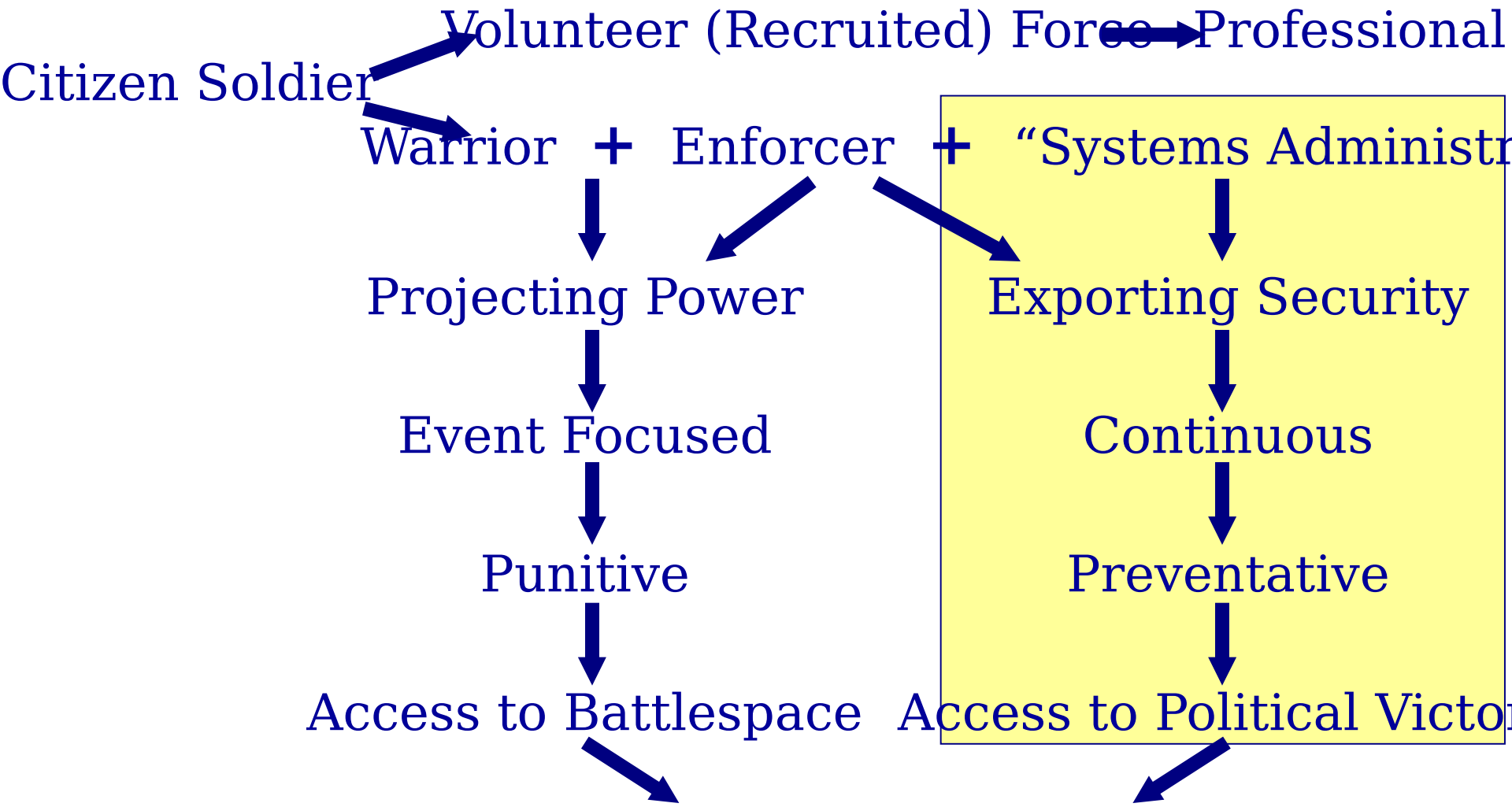
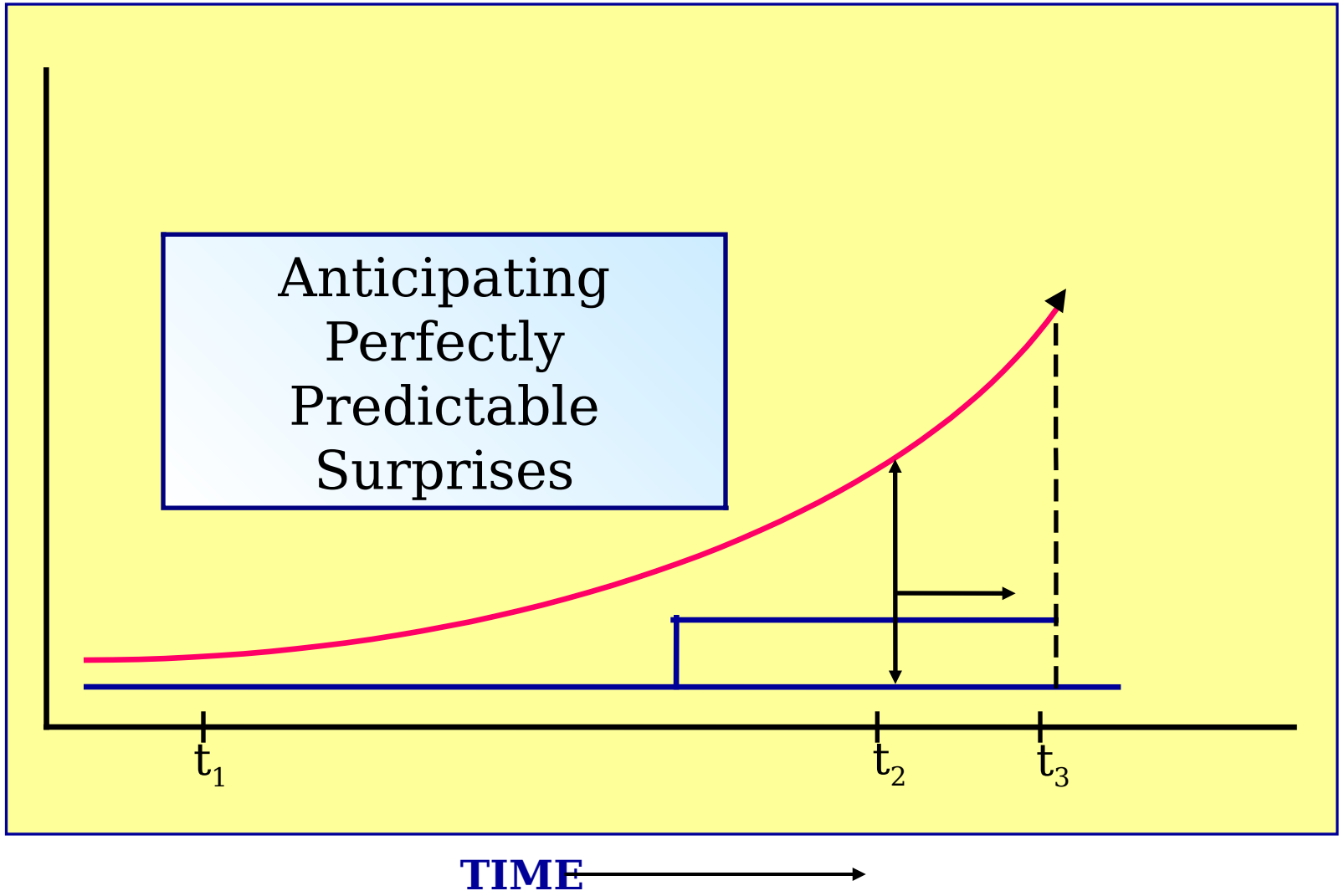


Top Level Issues

…Culture: Values, Beliefs, Attitudes



Informing Transformation



Global Trends and Implications

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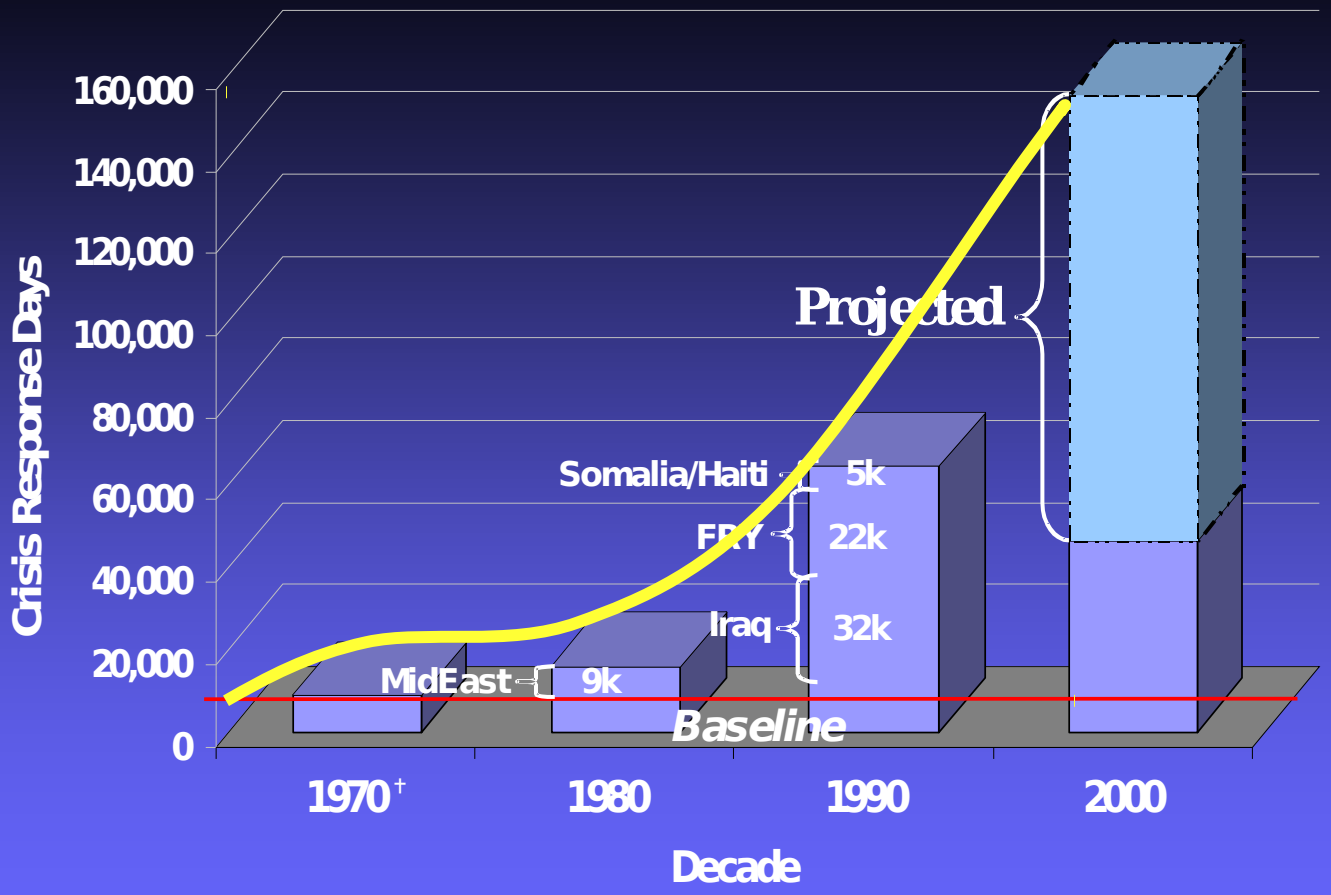
Policy Choices:

- *Engagement Policy*
- *Substitution of Capital for Labor*
- *Civil Component of National Security*
- *Allied / International Component*



† Excludes Vietnam War

* Total number of response days for all operations by Army, Navy, Air Force and Marines

The Collection – Analysis Gap

…Managing the inevitable

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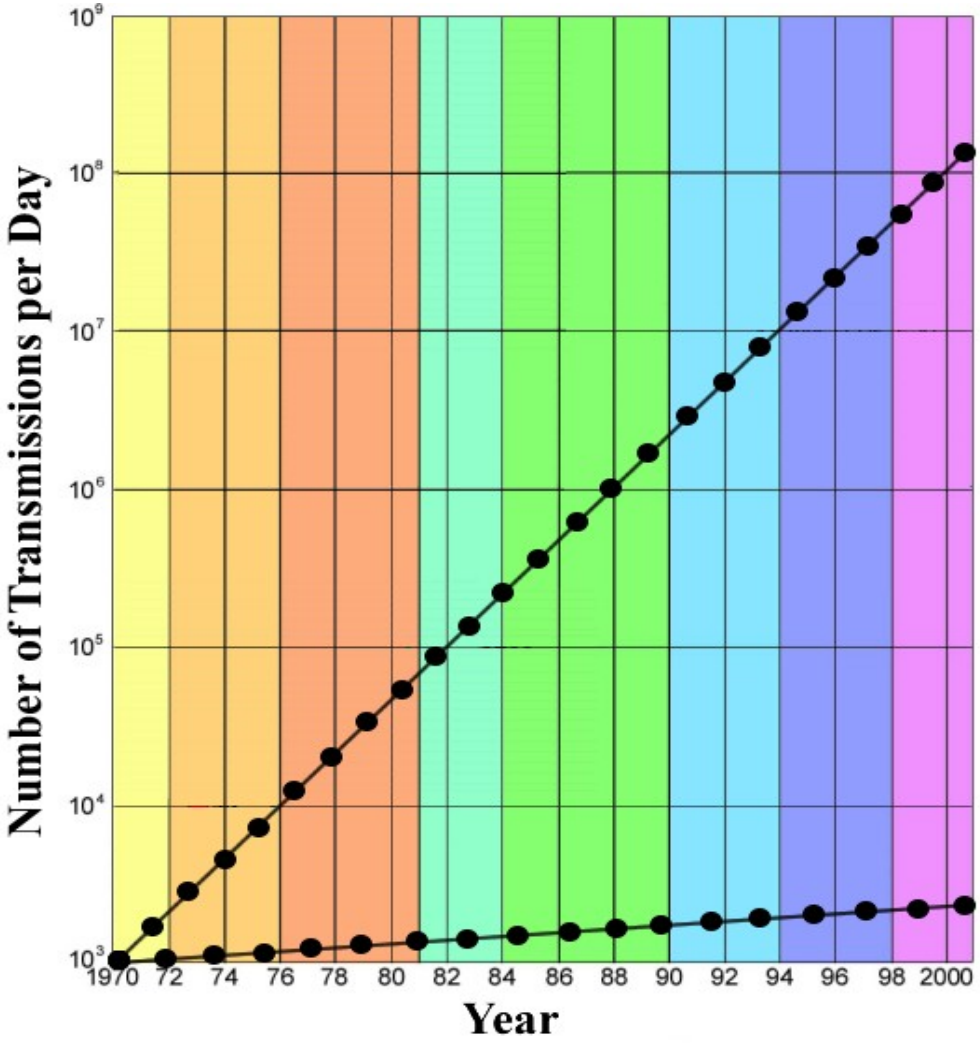

Policy Choices:

- ***Automate Triage***
- ***Automate Analysis***
- ***We all become analys***

"Networked Forces Outfight Non-Networked Forces"

"…it allowed us to make decisions and execute those decisions faster than any opponent."

Lt. Gen. David D. McKiernan

Land Component Commander, OIF

Military Response to Information Age: Network Centric Warfare

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Translates an Information Advantage into a decisive Warfighting Advantage

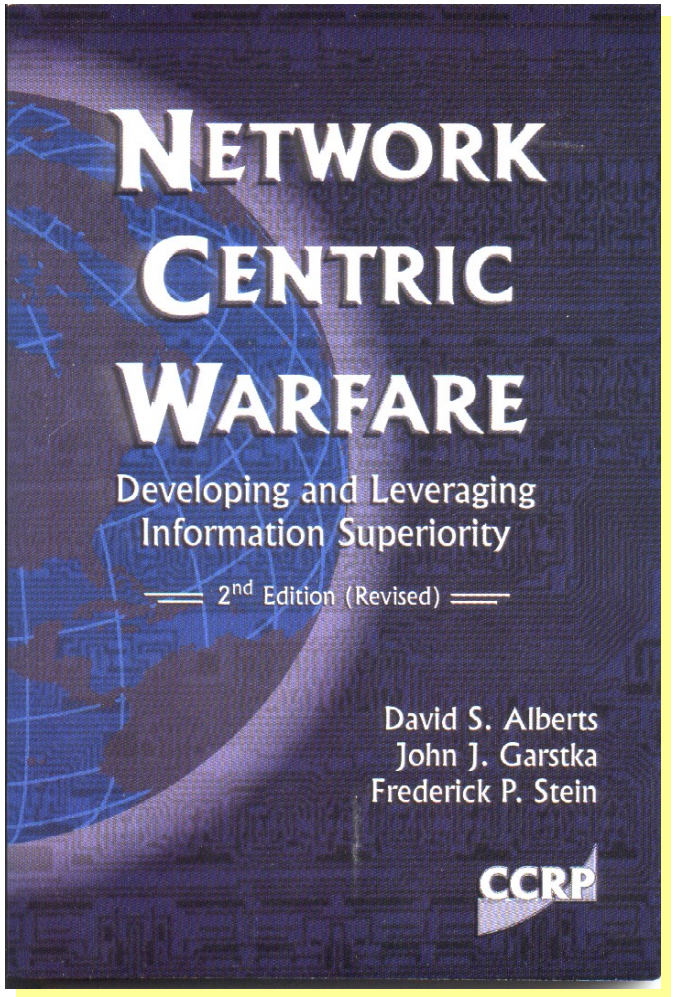
Information Advantage - enabled by the robust networking of well informed geographically dispersed forces

Characterized by:

- **Information sharing**
- **Shared situational awareness**
- **Knowledge of commander's intent**

Warfighting Advantage - exploits *behavioral* change and new doctrine to enable:

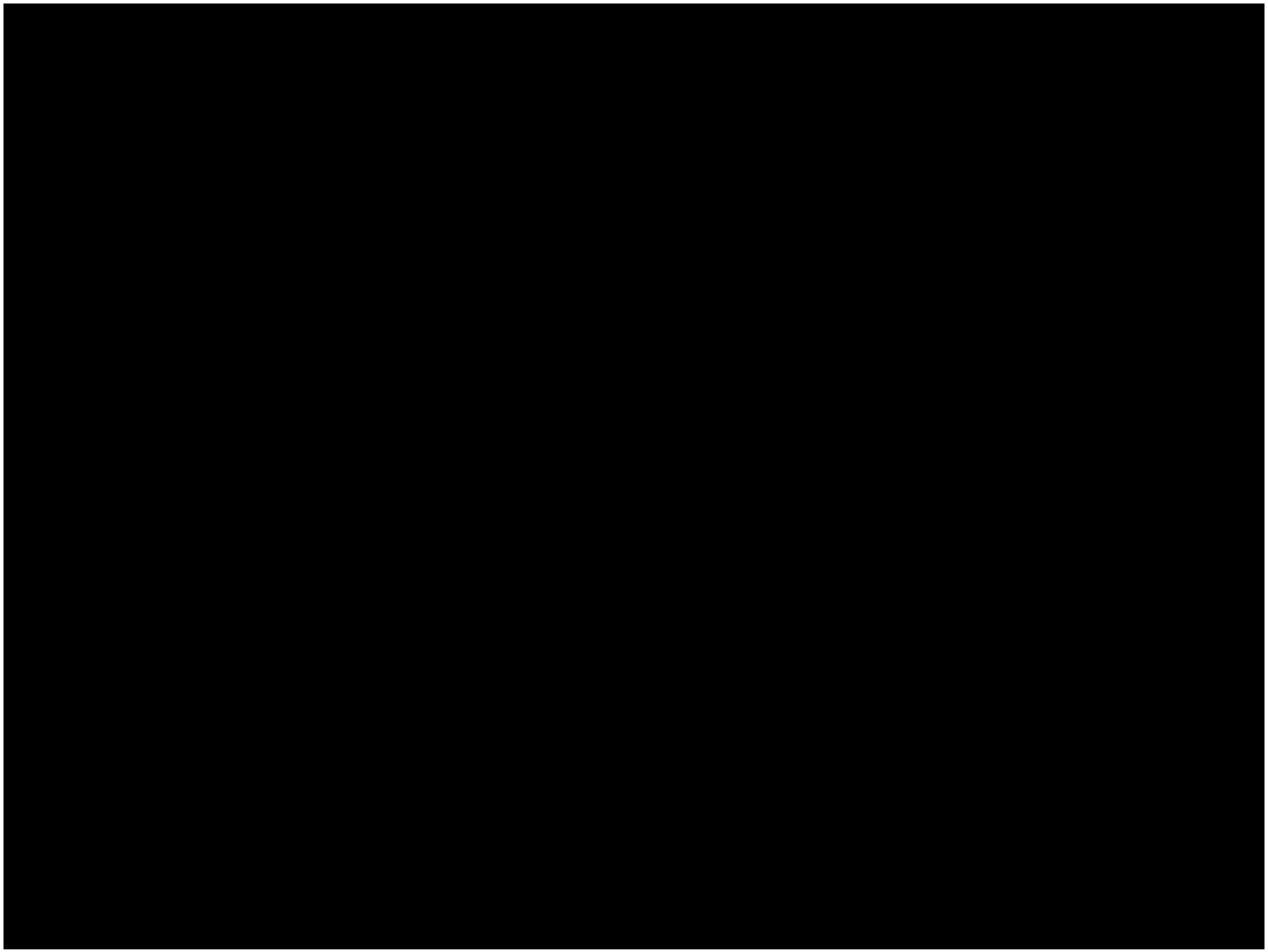
- **Self-synchronization**
- **Speed of command**
- **Increased combat power**



Information Sharing is a New Source of Power

Shared Awareness

...The new competitive advantage



Source: New York Times Television – The Perfect War, 2004

Competing in the Information-Age

…the power of Network-Centric Operations

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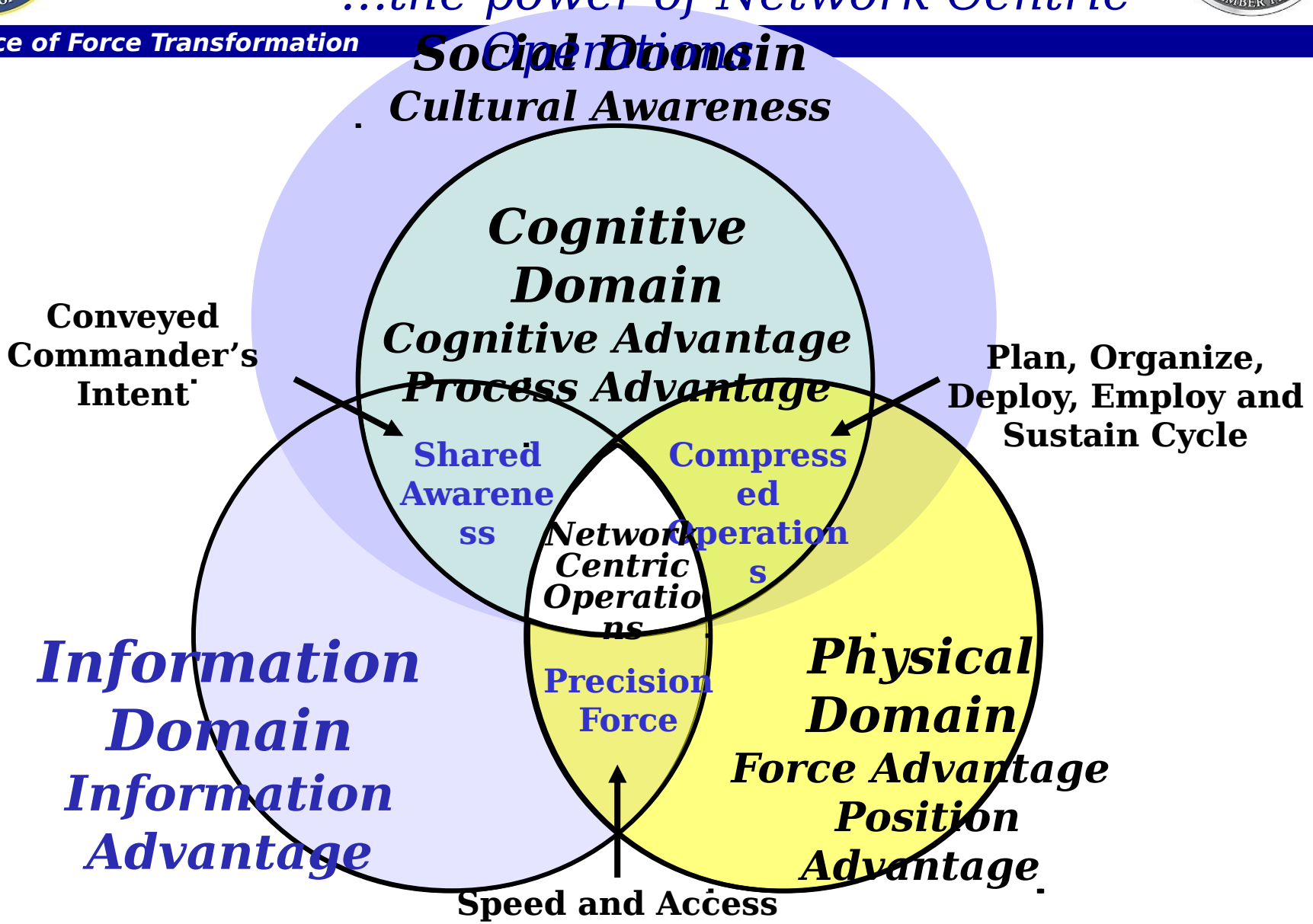
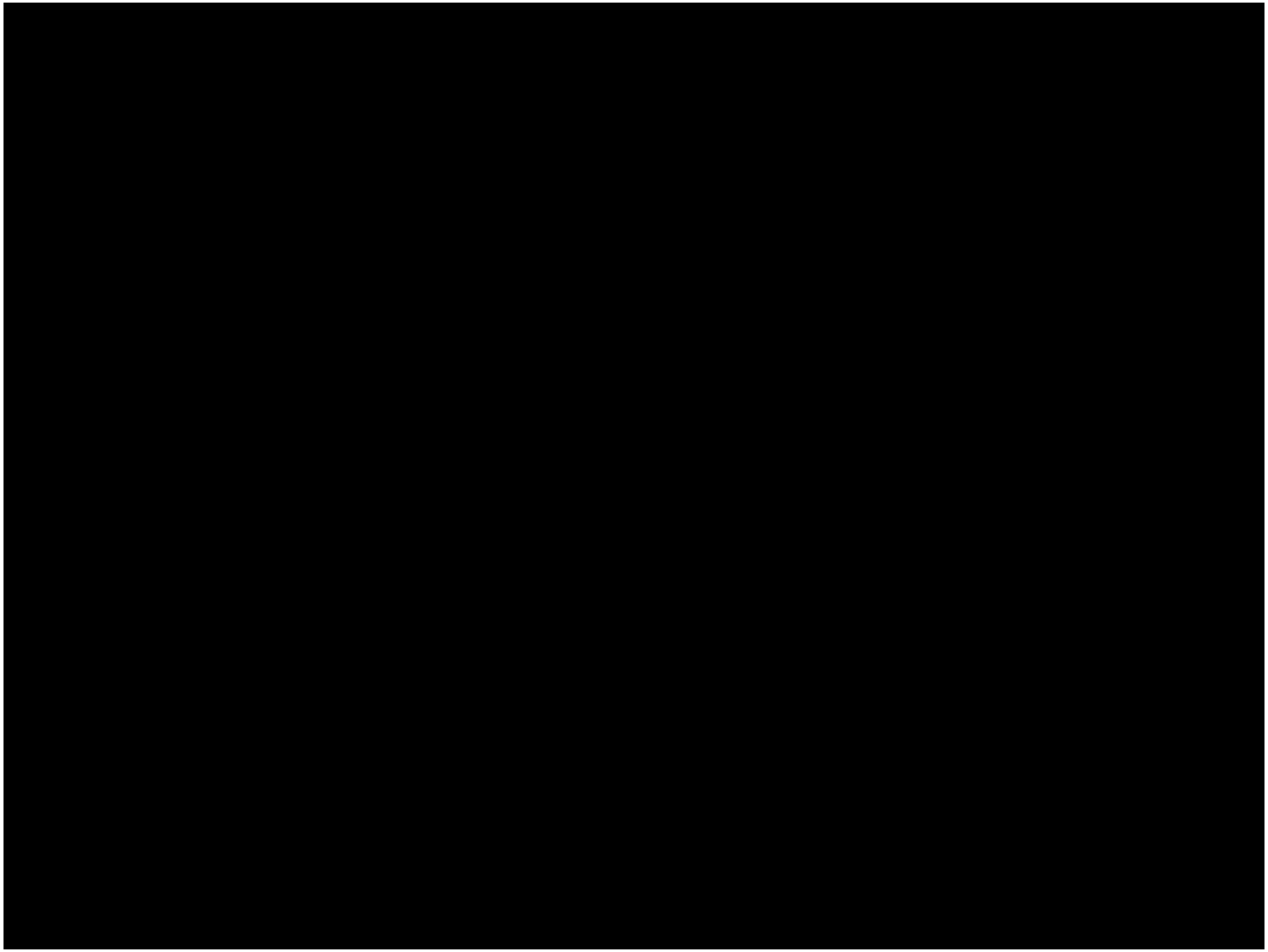


Shared Awareness

...in the cognitive and social domains

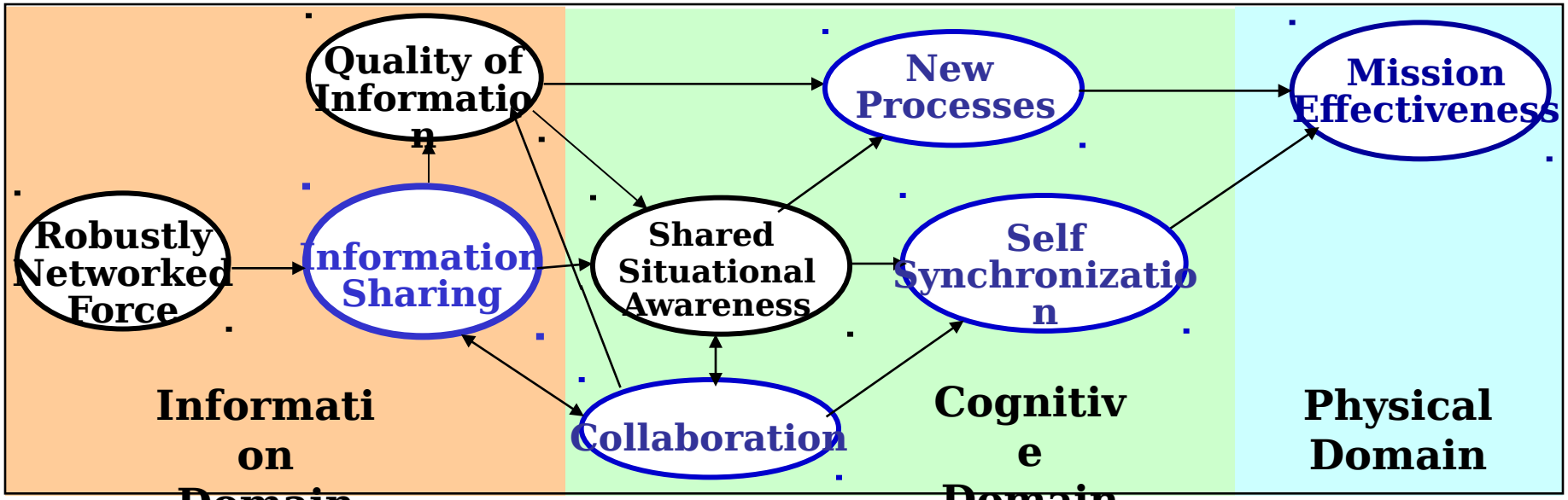


Source: New York Times Television – The Perfect War, 2004

Tenets of Network-Centric Operations

...The new value chain

- A robustly networked force improves information sharing
- Information sharing and collaboration enhances the quality of information and shared situational awareness
- Shared situational awareness enables collaboration and self synchronization, and enhances sustainability and speed of command
- These in turn dramatically increase mission effectiveness



Transforming Defense

…2nd derivative force

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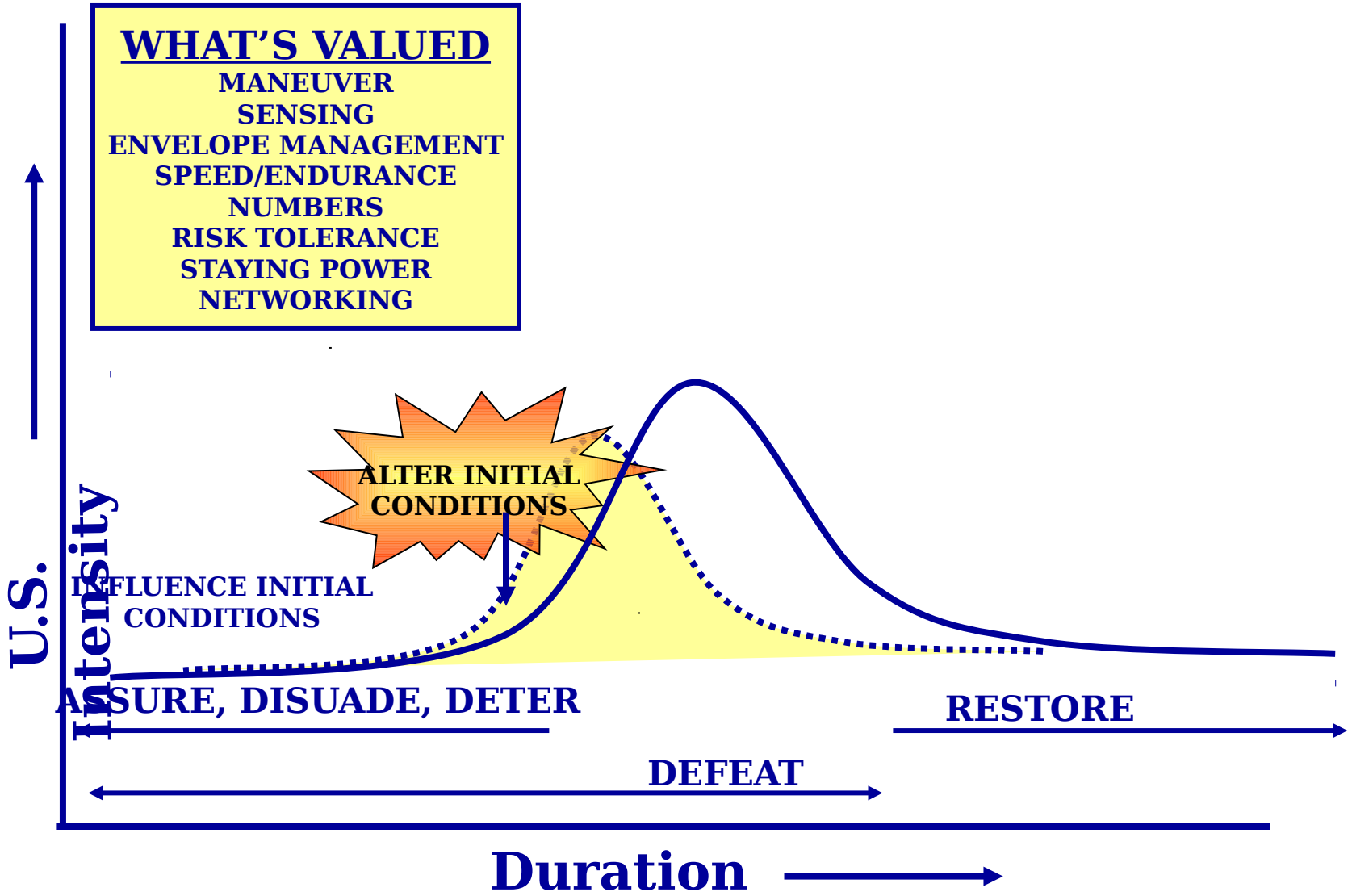

Identify Issues of Regret

Warfare Elements

- ***Fire –*** non-lethals, directed energy, redirected energy
- ***Maneuver –*** seabasing, vertical battlefield, lift for operational maneuver
- ***Protection –*** urban operations, “biomedical countermeasures” cycle time
- ***C2&C –*** joint interdependency vs. interoperability
- ***ISR –*** demand-centered intelligence, tactically responsive space
- ***Logistics –*** joint demand-centered logistics

Risk Management (*creating on-ramps*)

- ***Joint S&T –*** broaden the capabilities base, create generational depth
- ***Joint concept development & experimentation –*** short cycle time / rapid iteration, concept-based / technology-enabled
- ***Joint training –*** live / virtual / constructive / distributed
- ***People –*** culture and organizations

High Speed at Sea

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Ultra-Large Airlifters

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- **Desired capability... To meet military needs (now and future) and also multiple commercial needs**
- **Ultra-Large Airlifter (ULA)**
  - New term for proposed systems (airship or hybrid air vehicle)
  - Cargo: Payload and Volume far greater than conventional aircraft (100s of tons)
  - Range capability measured in thousands of miles
  - Speed significantly greater than surface ships
  - Will NOT require significant infrastructure for operation
- **Additional Airlift:** Origin to Destination
  - Volume is probably most valuable asset
  - Must bypass ports and airfields
  - Round the Clock Operation
- **Multiple platforms:**
  - Landing zone requirements/flexibility/rapid load & unload critical
  - Prioritize development: greatest military flexibility combined with commercial viability

VTOL - Crane

VTOL

STOL

Operational Maneuver

...from the Sea

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Operational Maneuver

…from Strategic Distances

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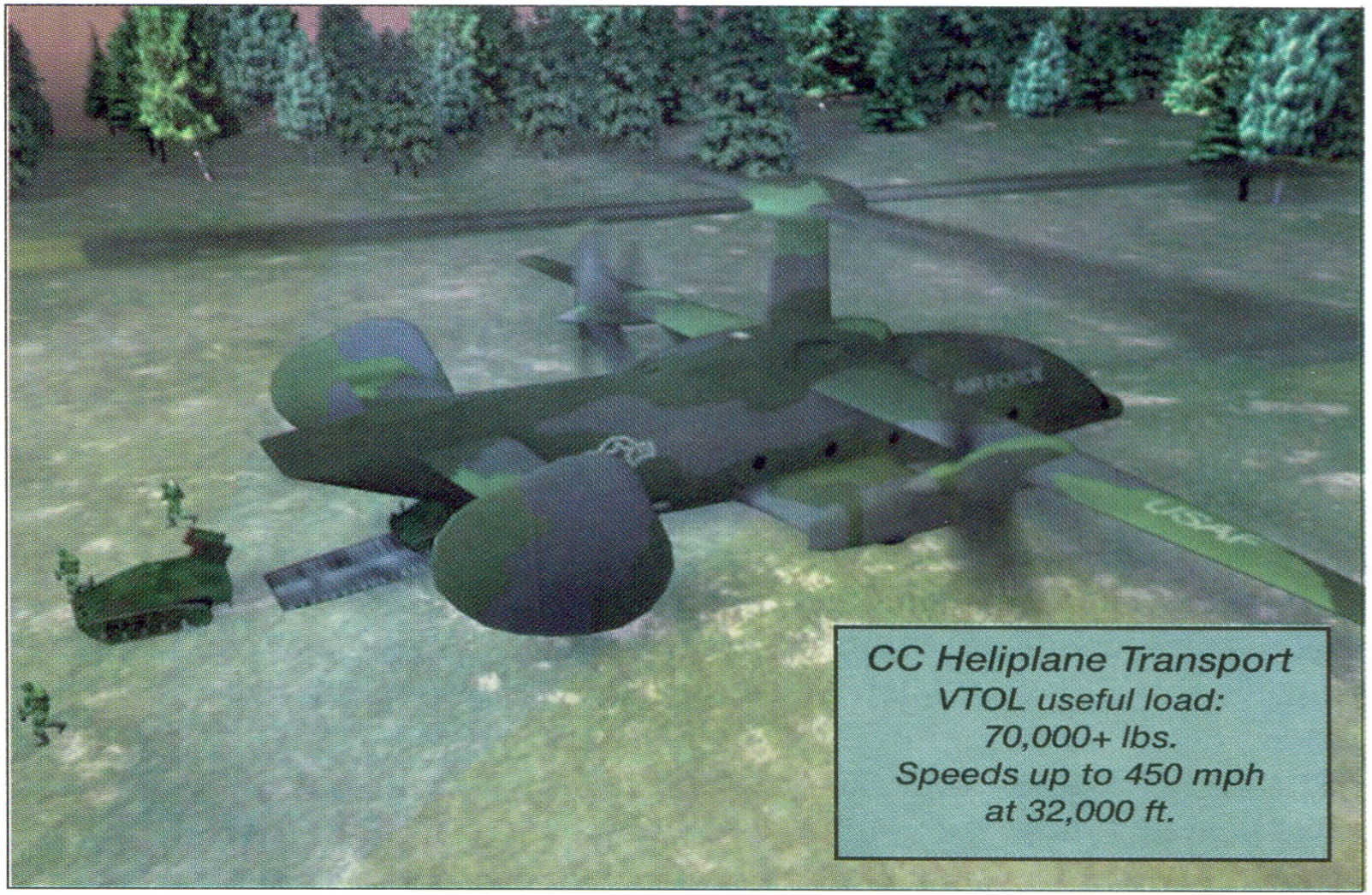

Relay Mirror System

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- **Attributes of an HEL-Relay Mirror System**
  - **Extended range of engagement for air, land and sea-based systems**
  - **Improved engagement timeline**
  - **Increased field of regard**
  - **Improved battlefield standoff for manned systems**
- **Low cost force multiplier**
  - **High Altitude Airship-based Relay Mirror Systems offer early operational capability for high value missions**

Operationally Responsive Space

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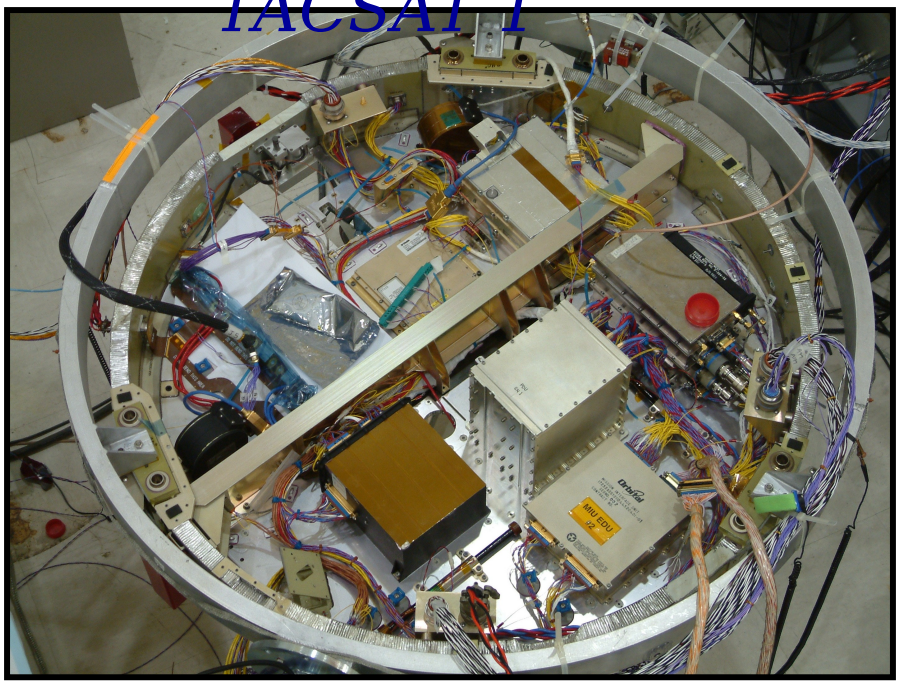
TACSAT 1



A capability on orbit within the planning time constraints of a major contingency

...

- Responsive
  - < 1 Yr concept to on-orbit capability
- Low Cost
  - Total cost of experiment less than $15M including launch
- Experiment
  - UAV Components in Space
  - Space/Air Horizontal Integration
  - Designer Payloads
  - TCP/IP Based: SIPR Net Accessed
  - New commercial launch vehicle
- Operationally relevant capability
  - Integrated into Combatant Commanders Exercises/Experiments
  - Time / Capability Trade Off

Approaches to Logistics

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Mass-Based

- More is better
- Mountains of stuff measured in days of supply
- Uses massive inventory to hedge against uncertainty in demand and supply
- Mass begets mass and slows everything down

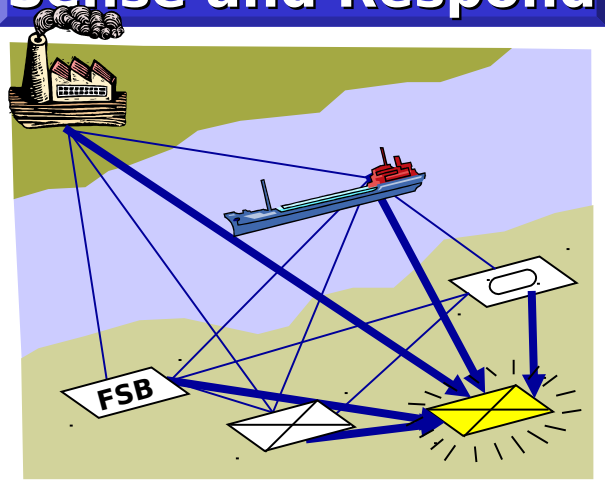
Prime Metric: Days of supply

Just-in-Time

- On-time is better
- Inventory is reduced to a minimum and kept moving
- Uses precise demand prediction and static optimization to purge uncertainty
- Works great … except when it doesn't

Prime Metric: Flow Time

Sense and Respond



- Agile is better
- Inventory is dynamically positioned throughout
- Uses transportation flexibility and robust IT to handle uncertainty
- Initial S&R models look promising

Transforming the Metrics

…Shifting value to outcomes

Initial Metrics

- Networking
- Speed
- Numbers
- Information Generators
- Dispersal

"Dissuasion" = f (present value of future capabilities, future value of present capabilities)

Value of Time vs. Cost of Speed

New Basis for Competition

- Create and preserve options
- Employ higher transaction rates

Transformation

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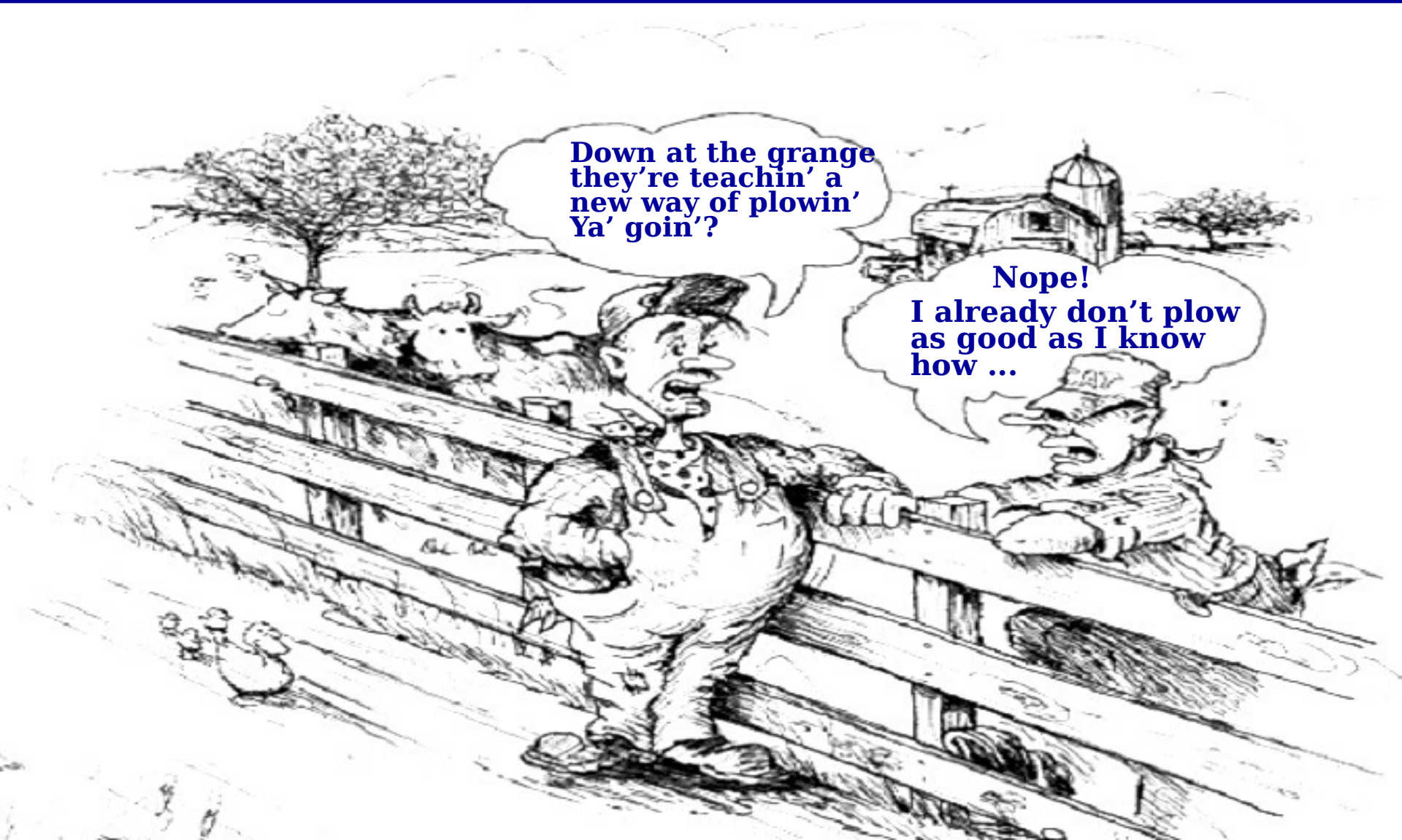

BACK-UP

Recommendations

Rebalance focus from “Traditional” to “Irregular,” “Catastrophic” and “Disruptive” challenges

Adopt cost as a strategy

- Both cost of war and program costs
- Create cost-suppressing strategies
- Transform non-discretionary areas
- Address cost imposing strategies against our adversaries

Transform management of key functions

- Realign information activities management under CIO
- Achieve demand-centered joint intelligence
- Organize joint logistics around the battlefield, not around the supplier
- Make generational S&T integral to the defense strategy

Strategic Approach to Cost

Key Elements

- *Decrease operational costs*
- *Achieve better ROI for less*
- *Broaden the capabilities base*
- *Create and preserve future options*
- *Manage divestiture*
- *Transform non-discretionary areas*
- *Impose cost to adversary*
- *Develop counter-cost imposing strategies*

New metrics create opportunities for new cost dynamics!

The Advance to Baghdad

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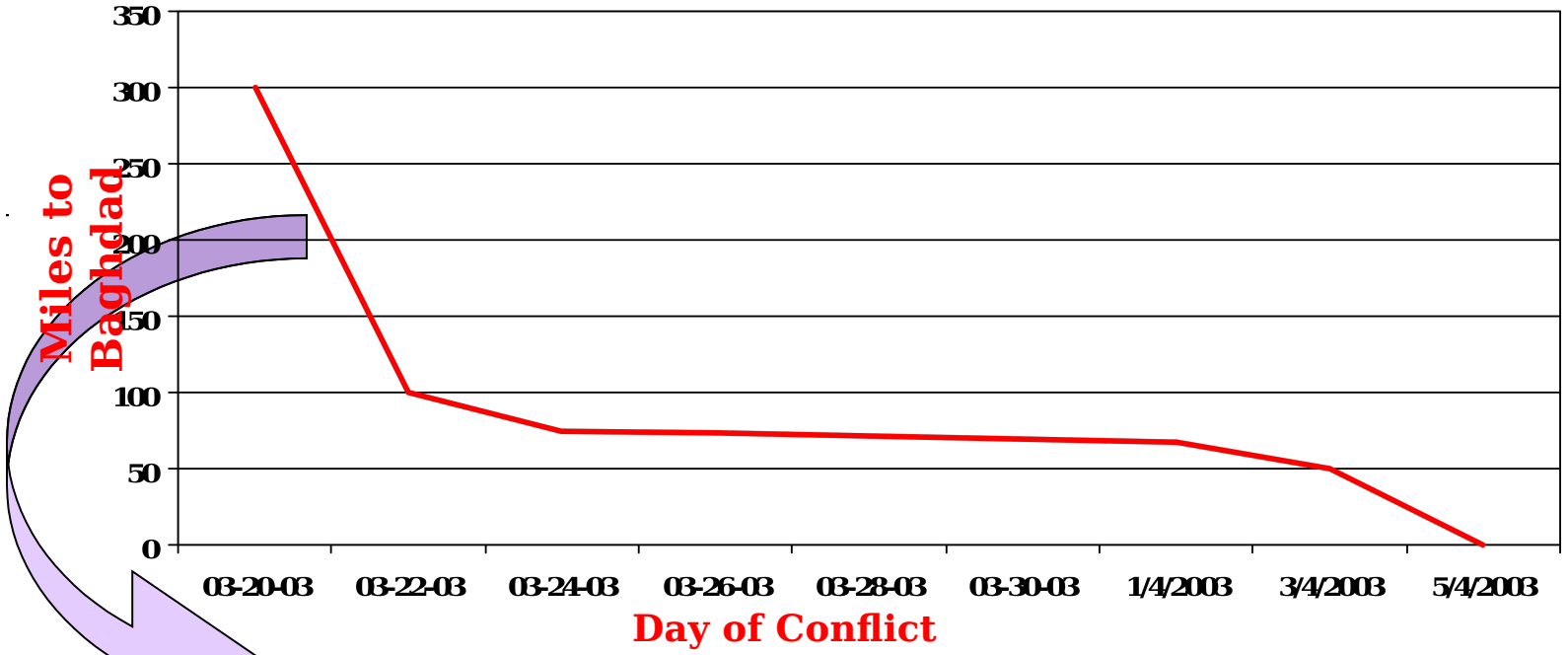

1. **Rate of Advance outruns logistics communications and transportation**

2. **Logisticians shift to "push" system – use models, SitReps, to "sense" supply needs**

3. **Tactical Units shift to cross-supply to fill gaps**

Strategic Approach to Cost

Budget Strategy	Cost Strategy
•Fixed Metrics	•Flexible Metrics
•Reduce total expenditures	•Reduce individual entity c
•Decreasing ROI	•Increasing ROI
•Greatest margin/ transaction	•Greatest number of transactions with positive margin
•Reduce transactions to reduce cost	•Maximize transactions proportional to entity cost

Holding costs high creates opportunities for countervailing strategies …and may be counter to dissuasion

Transforming Defense

… Corporate Strategy

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Part I: Continuous small steps

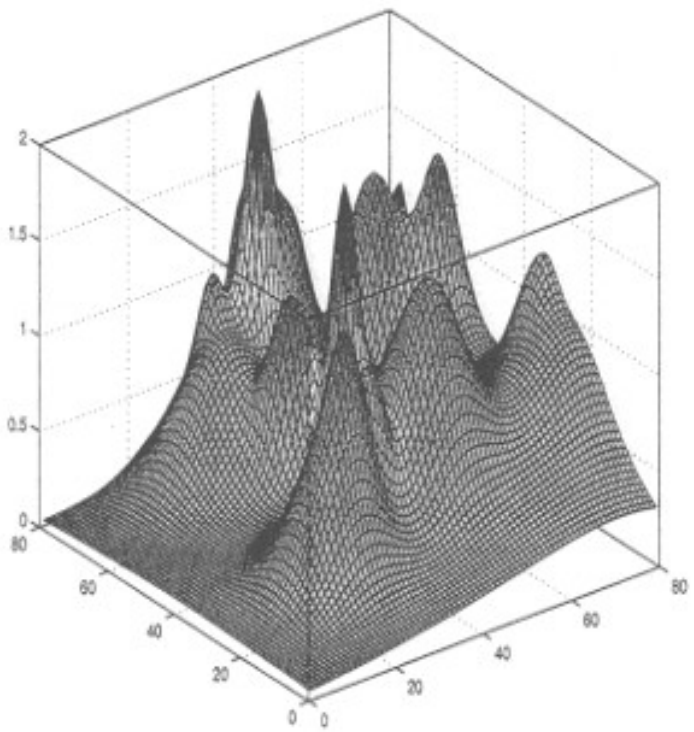
- Sustaining
- Evolutionary changes
- Stay on the local maximum

Part II: Many medium jumps

- ***Explore and expand the local region***
- ***New doctrine / organization / systems***

Part III: A few big bets

- ***Could change DoD***
- ***Change the world***
- ***Create a new game with new rules***



"If you are not making any big bets, you are a fixed strategic target <u>and</u> at risk."

Transforming Defense

… Methodology

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Strategic | Threat | Technology

…Compelling Need

Operational Goals

- Protecting Bases
- Conducting Info Operations
- Project & Sustain U.S. Forces
- Denying Enemy Sanctuary
- Conducting Space Operations
- Leveraging Info Technology

Transformation Strategy

Joint Concepts

Capabilities

Technolo | Process | Organizati | People

Transforming Defense

...Decision logic

Does it re-establish a leadership position and lock out competition?

Does it dramatically increase the speed of deployment, employment and sustainment?

Does it support a concept that is in devolution?

Does it leverage U.S. asymmetric advantages?

Does the acquisition strategy dramatically reduce capabilities cycle times?

Will it profoundly alter the competition more than lega

Transforming Defense

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...Decision logic

Is the system interoperable?

Can it be readily made a networked participant?

Does it broaden the capabilities?

Is the system operating at decreasing ROIs on investment?

Are new technologies available at lower investment, both for acquisition and life cycle costs?

Is it less expensive to effectively counter the system than it is to sustain it?

Does it allow us to do something we can not currenti

Connecting the Present to Our Future

Expanding Competition → *Power and Principle*

→

Strategic Posture *Shrinking the Dysfunctional, Disconnected Gap of Globalization*

Operational Maneuver *Creating a one-two punch*

Mapping Future Challenges Risk

Issues:

- ***How to make near-term actions robust across alternative futures?***
- ***How to create on-ramps for capabilities?***

Operation Iraqi Freedom

...What we saw

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- ***Grand Strategies in Tension***

"...the 21st century and September 11th have, in fact, changed the circumstances in the world significantly."

Secretary Donald Rumsfeld

- ***Network-Centric Warfare***

Implementation

"...it allowed us to make decisions and execute those decisions faster than any opponent."

Lt. Gen. David D. McKiernan

- ***The Power of Transformation***

"...a campaign...unlike anything that we have seen before,"

Gen. Tommy Franks

Total Force Balance

... Security = All Else + Defense

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Domain of Cooperative Engageme

Winning / Maintaining the Peace

Social Intelligence

All Sources of Power

Domain of Political Victory

Maximum Complexity

The Commons:

The Strategic Imperative

High Seas & Air

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Winning the War

The Close

Domain of Strategic Primacy

Domain of Military Victory

Winning the

Comba

Military Intell

Combat Powe

Transforming Defense

… Corporate Strategy

Office of Force Transformation

Part I: Continuous small steps
- *Sustaining*
- *Evolutionary changes*
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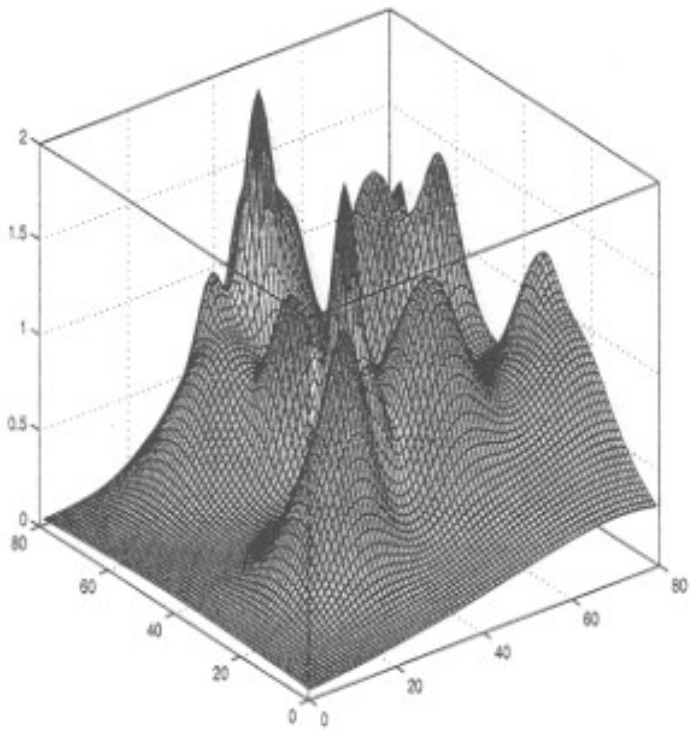

"If you are not making any big bets you are a fixed strategic target <u>and</u> at risk."

Transforming Defense

...Corporate strategy

The Department's efforts fall into three categories

- ***Incremental* capability enhancements generally termed "modernization"**
- ***Significant* capability improvements within the current American Way of War (medium jumps)**
- ***New* rule sets that leverage new sources of military power creating a new American Way of War (big bets)**

Create a new game with new rules

Strategic Posture

...Exporting Security

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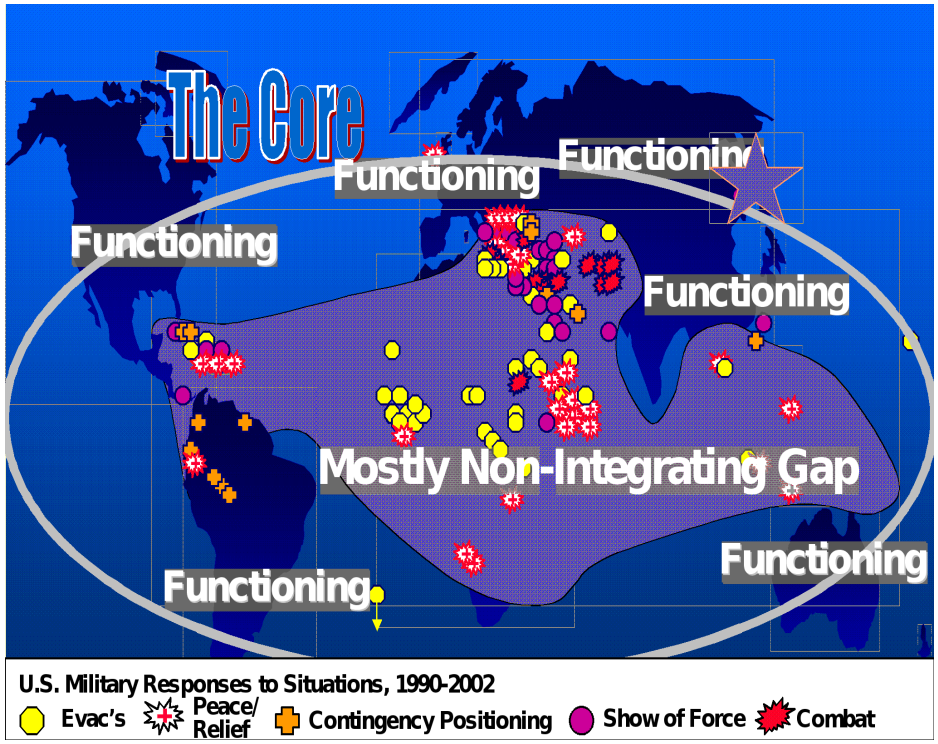
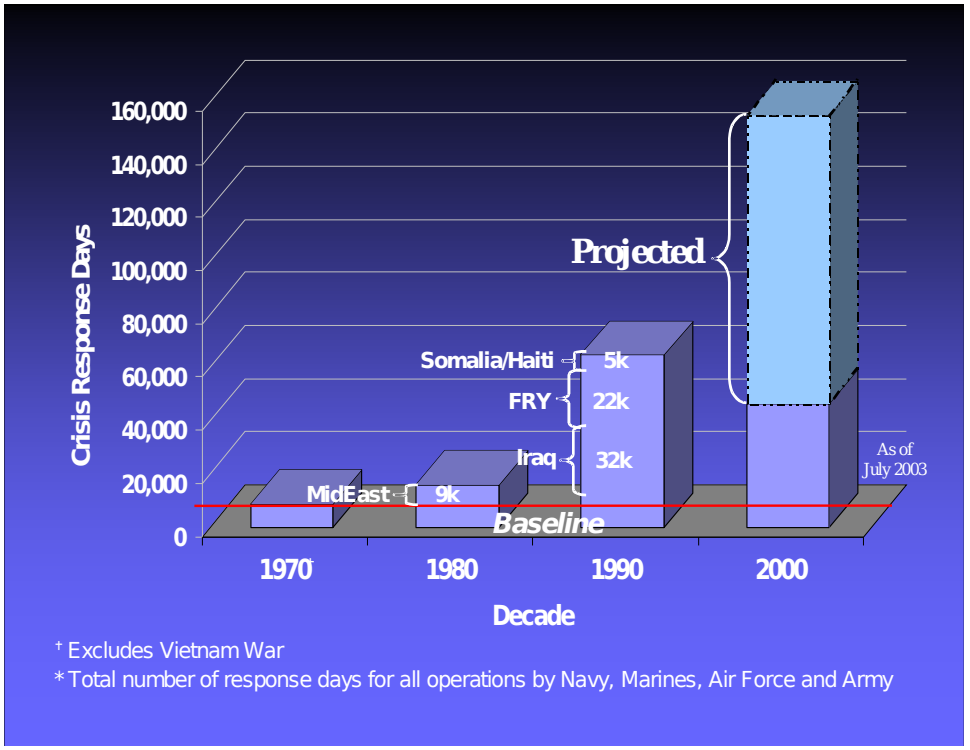
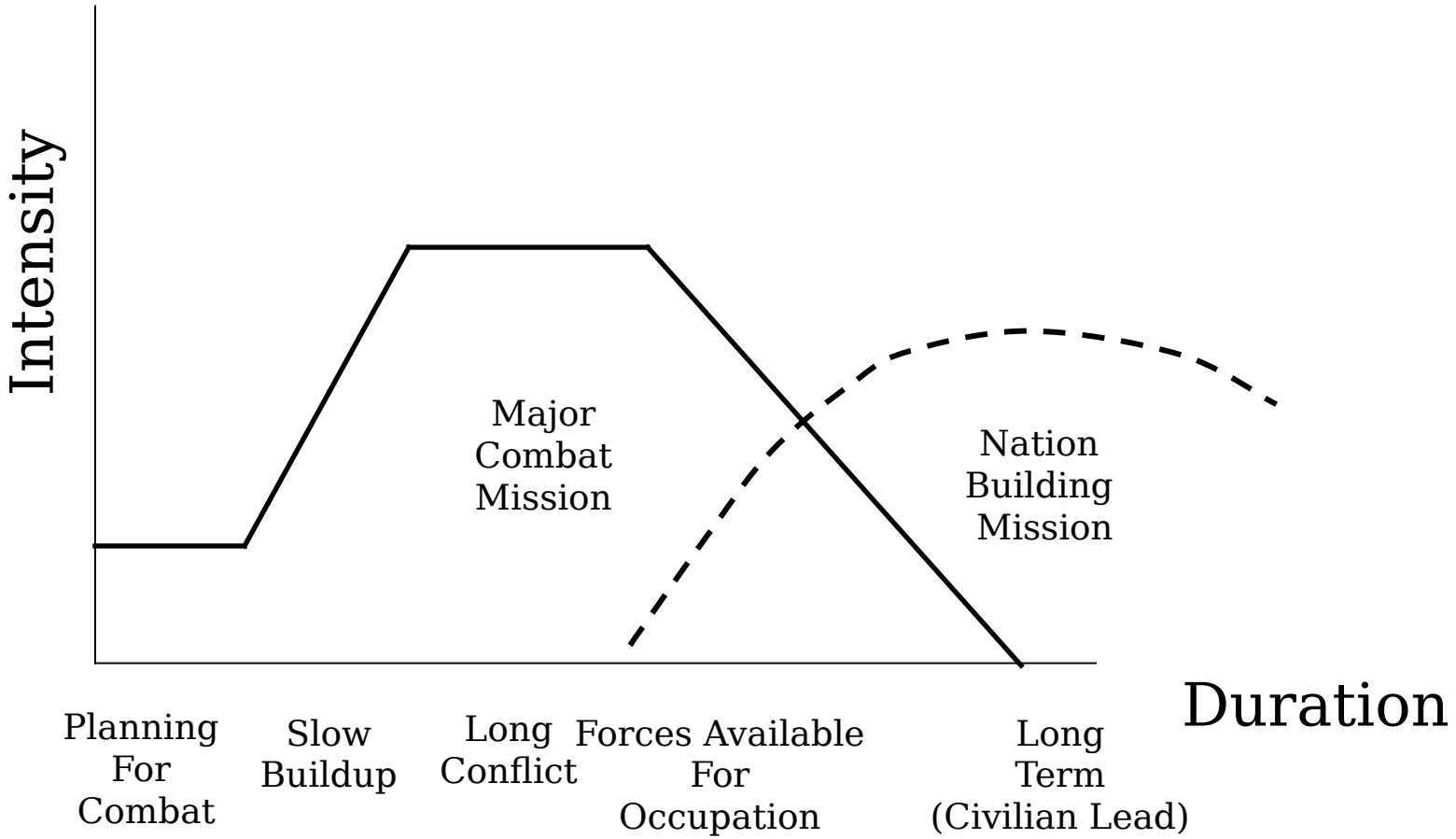
The New National Security Challenge



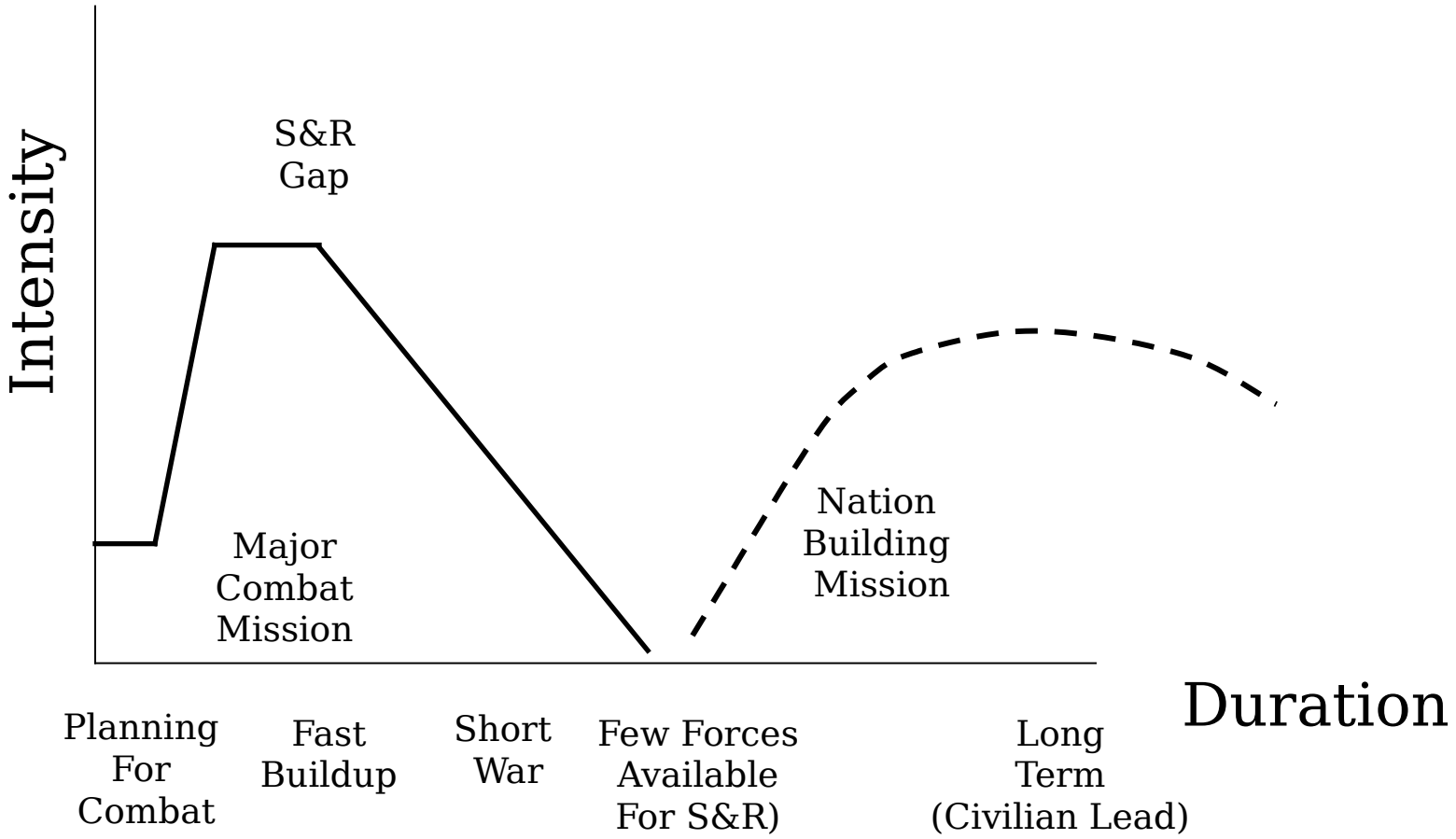


The Red Zone... ***...Our Response***

The Stabilization Mission Gap

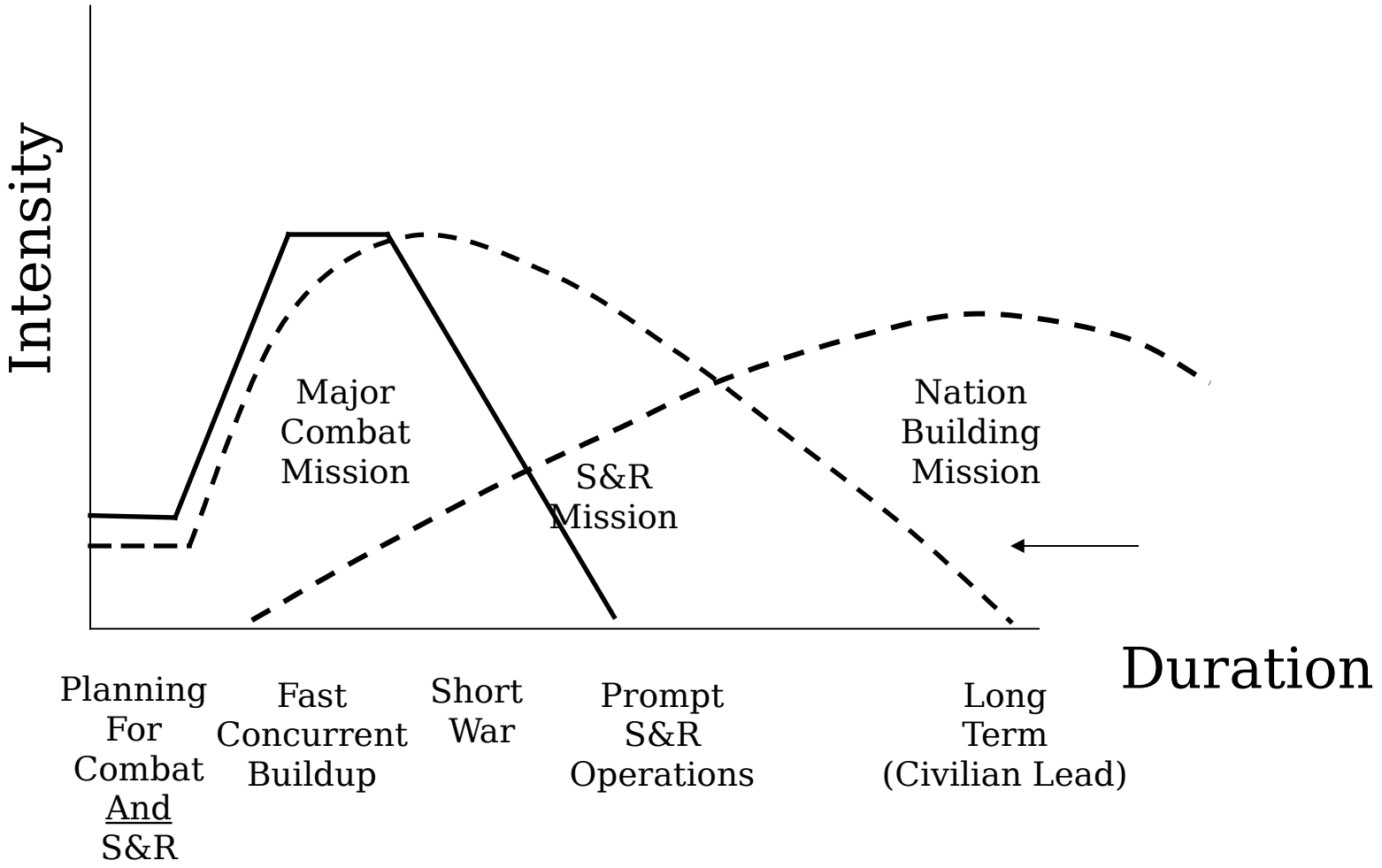


The Stabilization Mission Gap



The Stabilization Mission Gap

Transformed S&R Capability (Bridge to Nation Building)



Transforming Defense

...Compelling need

- New strategic context
  - *New Theory of War based on information age principles and phenomena*
  - *New relationship between operations abroad and homeland security*
  - *New concept/sense of security in the American citizen*
- Broadened threat context
  - *State/Non-State*
  - *Nodal/Non-nodal*
  - *Symmetric/Asymmetric*
  - *Traditional/Unrestricted*
- New technological threats facilitated by the falling barriers to competitive entry
  - *Immediate accessibility to highly capable low cost IT*
  - *Opens key operational domains to competition: space, sea, cyberspace*

To the extent we do not transform, we are at risk

Transforming Defense

... *Elements of strategy*

- Transform from Industrial Age to the Information Age
  - *Implement Network Centric Operations*
- Ensure sustained competitive advantage
  - *Assure Allies*
  - *Dissuade competitive entry*
  - *Underwrite deterrence*
  - *Implement countervailing strategies*
- Broaden the capabilities base
  - *Operational, Technical, Industrial*
  - *Create new competitive areas*
  - *Revalue competitive attributes for the information age*
  - *Decrease capabilities cycle time*
- Leverage advantages and opportunities
  - *Manage the devolution of "sunset" capabilities and processes*

Achieve Speed and Agility vice Optimization

Picking the Issues: Identify the Perfectly Predictable Surprises

You're looking at a perfectly predictable surprise when you see:

- Mismatches in metrics
- Systemic contradictions that must be resolved sooner or later
- Strategies yielding negative returns on investment
- A widening gap between transaction rates and resource availability

What Are the Issues?

...Resolving the Contradictions

Where is the Convergence Between ffects" and Political Victory?

How Do We Pre-empt When We Can't Find Targets Hiding in Plain Sight?

- Defensive Orientation
- Social Intelligence vs Military Intelligence

How Do We Avoid Strategic Surprise?

Competency vs. Relevancy

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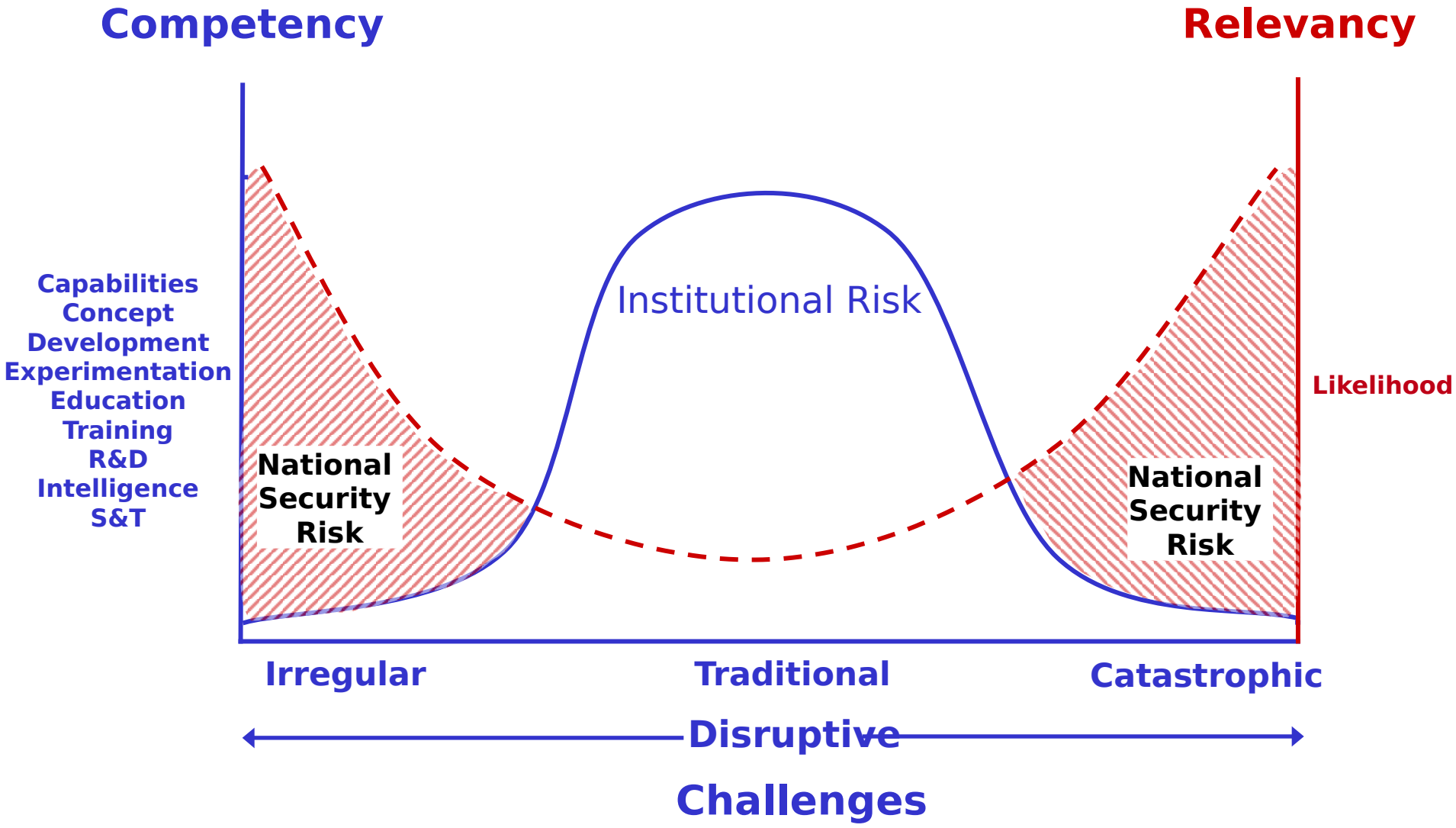

Leading Organizational Innovation

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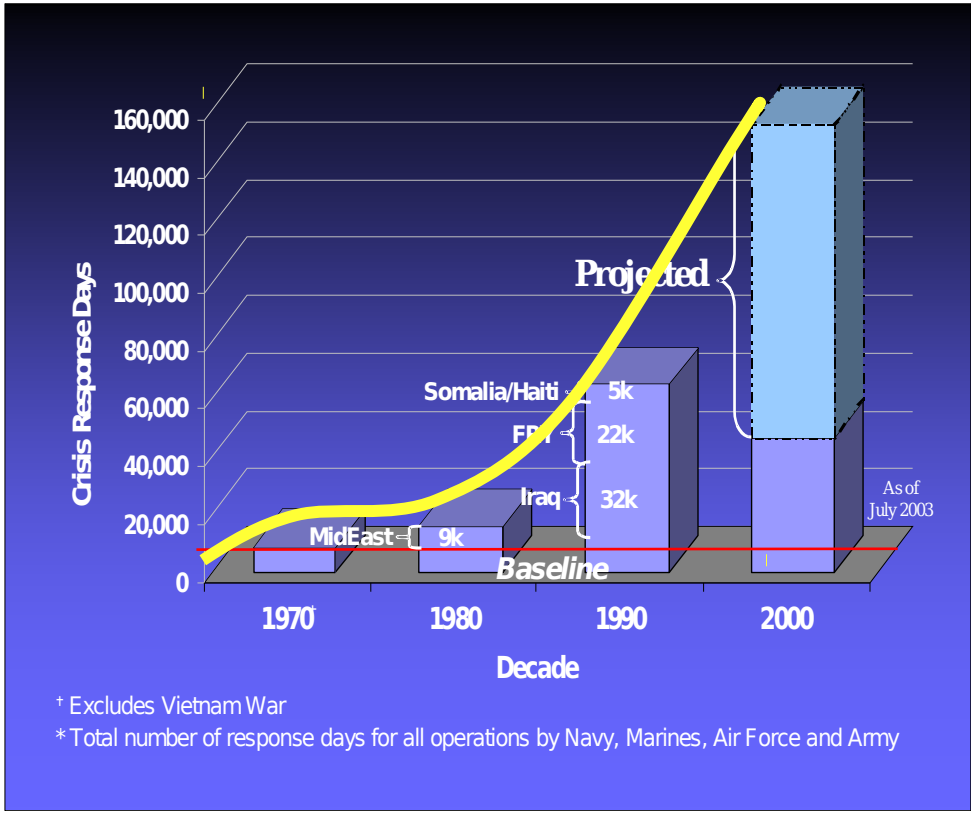
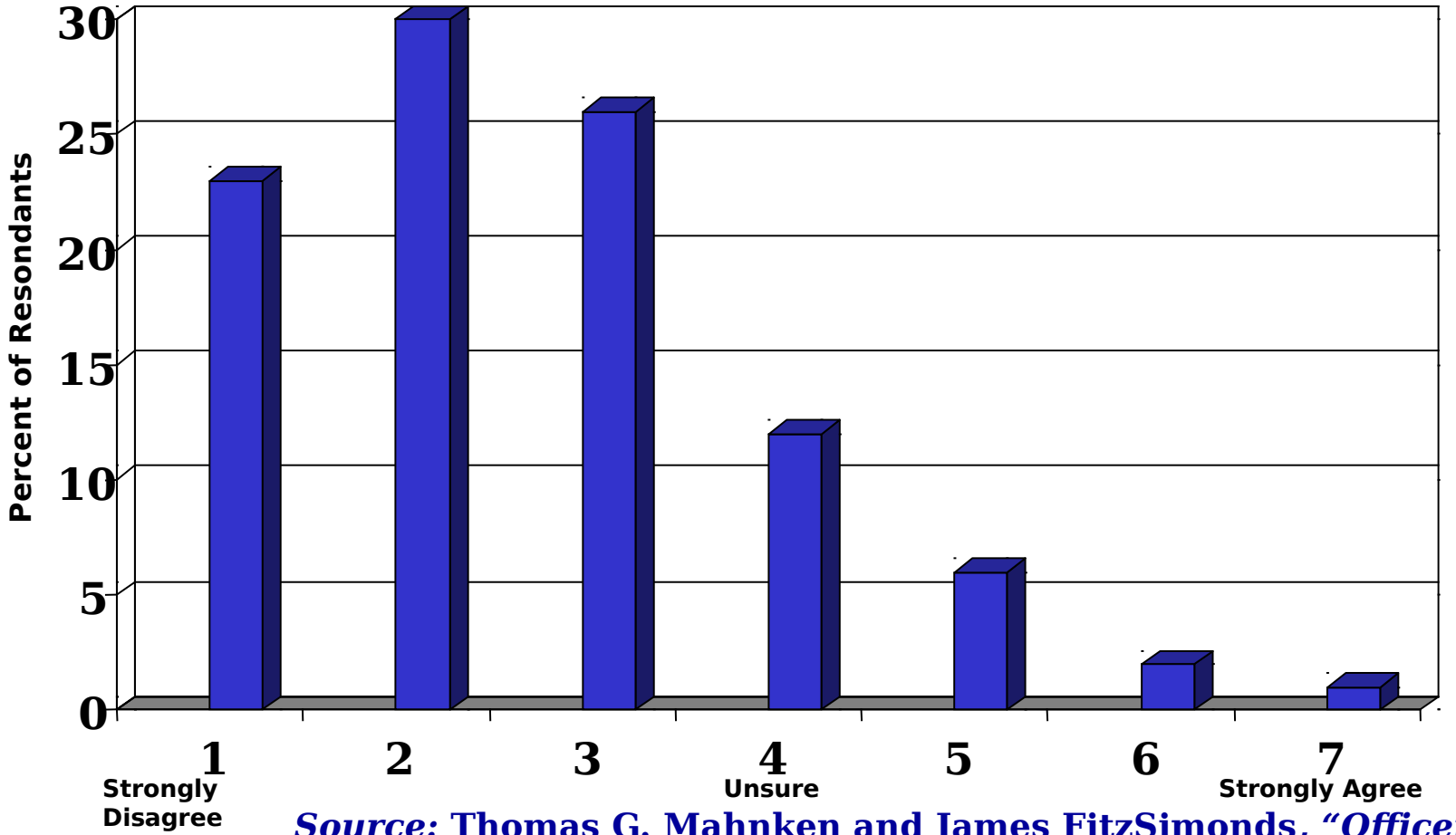
- Examine the Underlying Rule Set
- Relocate the Complexity
- Break the Model
- Change Perspective
- Cross Disciplines
- Synthesize
- Solve a Different Problem
- Identify the Inevitable and



Within the next 10 years, some adversaries will likely have the ability to use long-range precision strike weapons such as ballistic and cruise missiles to deny our use of fixed military infrastructure, such as ports, airfields, and logistical sites



Source: **Thomas G. Mahnken and James FitzSimonds, *"Officer Attitudes Toward Innovation"*, Naval War College, 2002**

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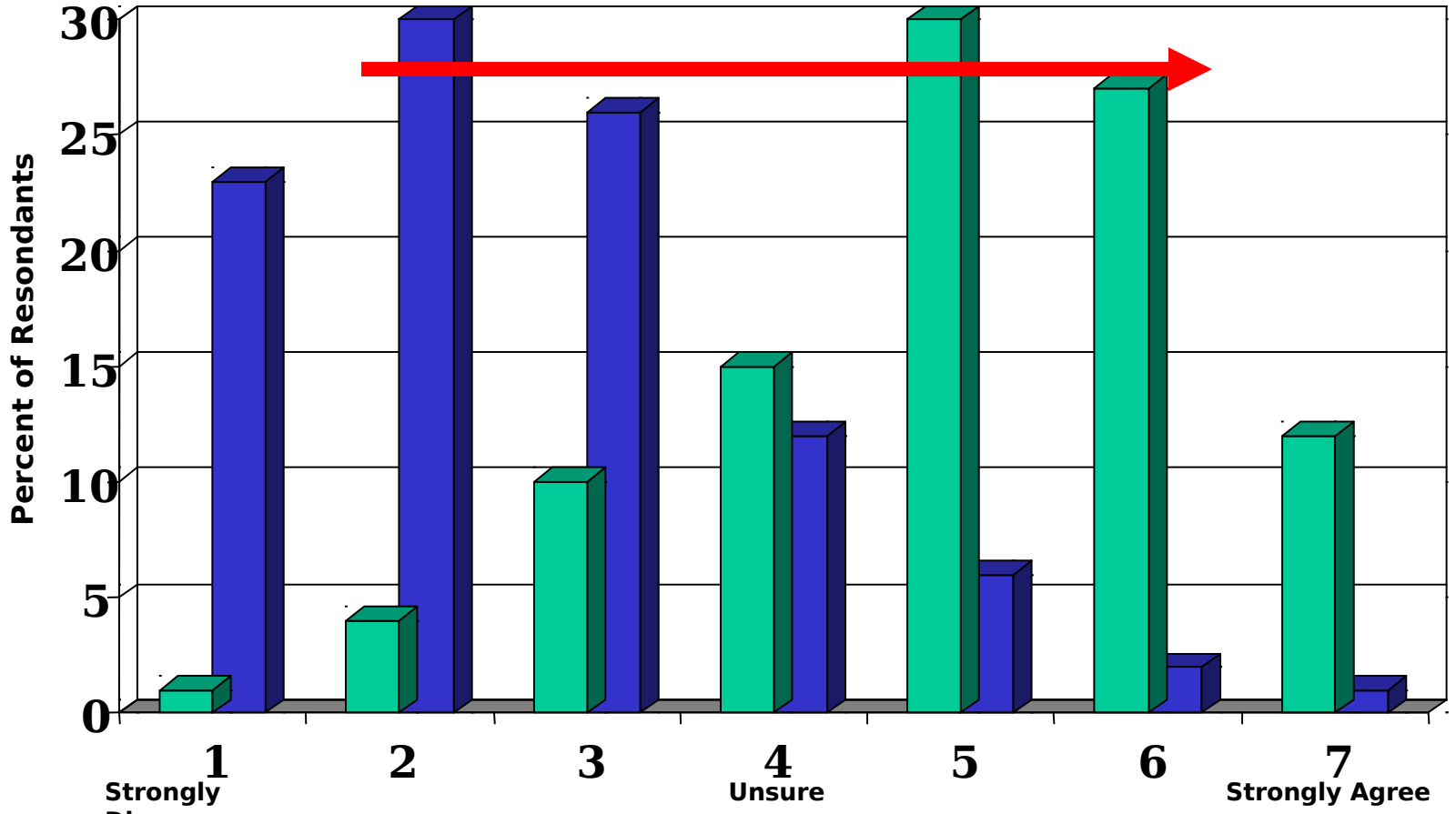

"The Limits of Transformation: Officer Attitudes toward the RMA," Tom Mahnken and James Fitzsimmons NWC, 2003

Security System Balance?

...Major Movements

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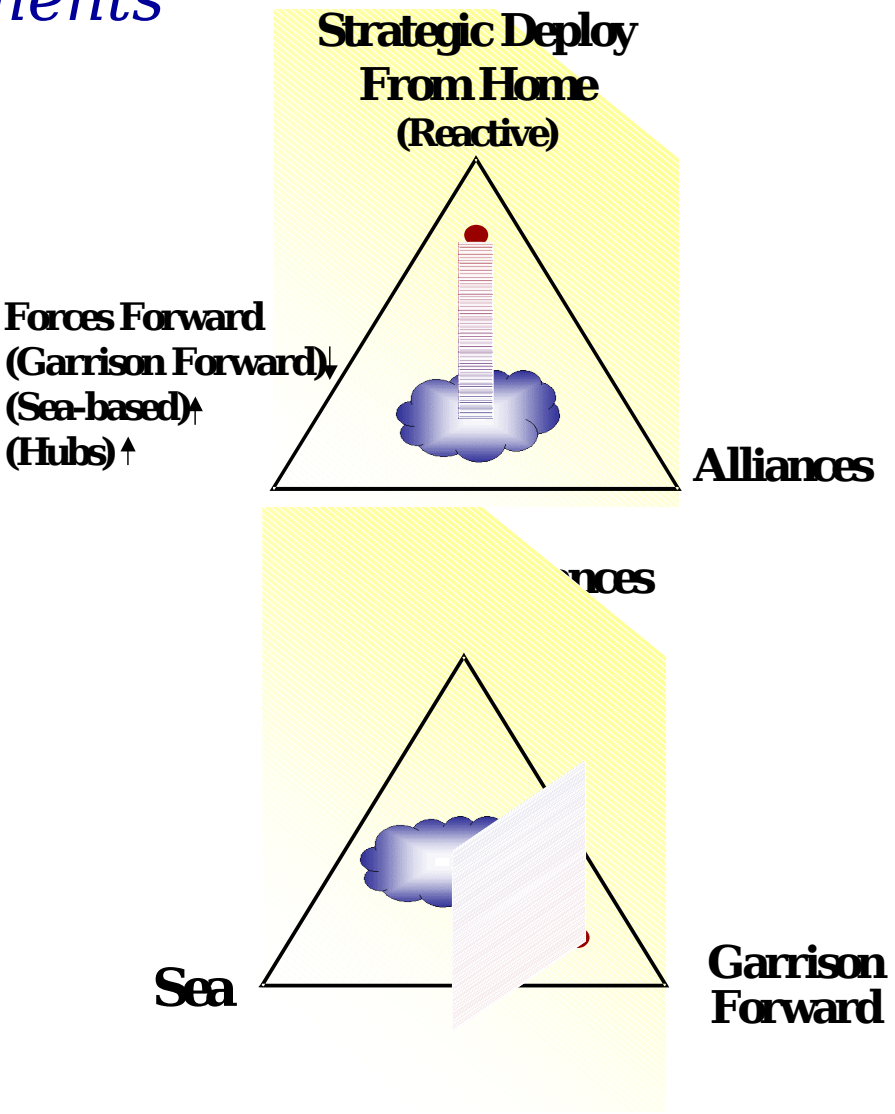
orces forward
eploy from home
lies

ional Maneuver
rom forward garrison
rom the sea
rom strategic distances

Forward
d derivative force
ustaining force
onstabulary/Nation-building force



Operational Maneuver

…from the Sea

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